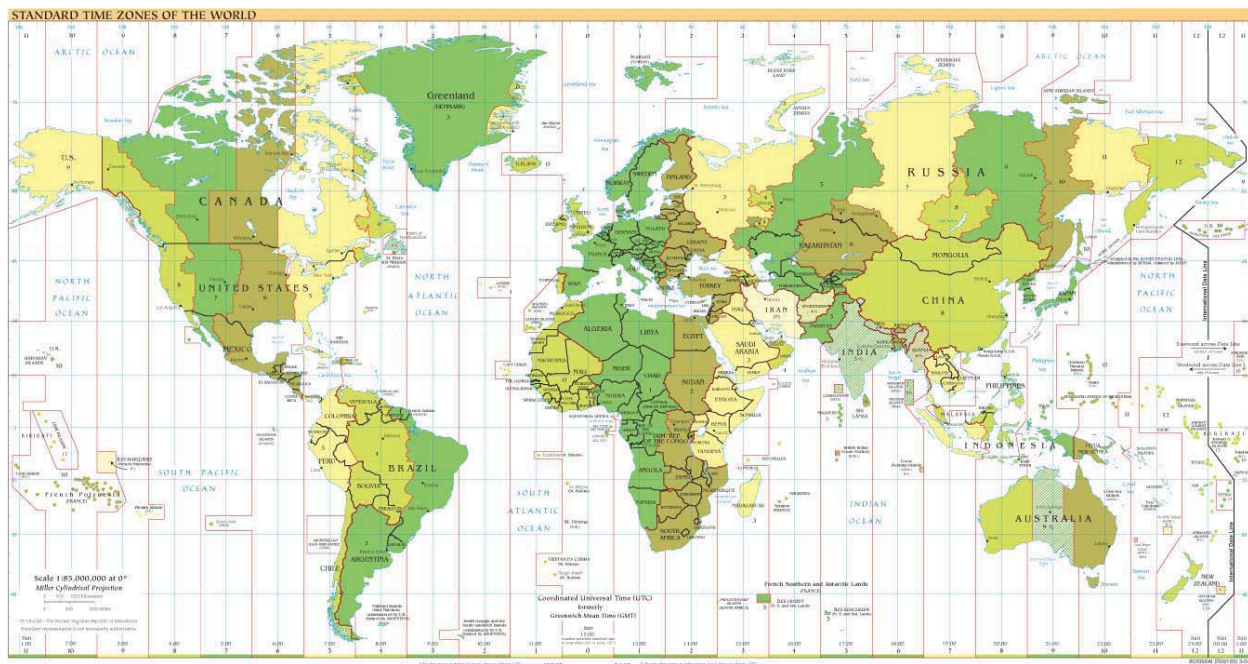


# PROCEEDINGS

of the

## IABE-2012 Venice- Summer Conference

Venice, Italy  
June 8 - 10, 2012



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Managing Editors

June 8, 2012  
Venice, Italy

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# COMPETITIVE ENVIRONMENT, ORGANIZATIONAL INNOVATION AND COMPETITIVE ADVANTAGE OF ELECTRONICS BUSINESSES IN THAILAND

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## ABSTRACT

*This study aims at investigating the relationships among competitive environment, organizational innovation and competitive advantage of electronics businesses in Thailand. In this study, competitive environment is the independent variable; organizational innovation is the mediating variable; and competitive advantage is the dependent variable of the study. Here, 121 electronics businesses in Thailand were chosen as the sample of the study. The results indicate that competitive environment has a significant negative influence on organizational innovation; and organizational innovation has an important positive impact on competitive advantage. Potential discussion is efficiently implemented in the study. Theoretical and managerial contributions are explicitly provided. Conclusion, suggestions and directions for the future research are included.*

**Keywords:** *Competitive Environment, Organizational Innovation, Competitive Advantage*

## 1. INTRODUCTION

Recently, electronics businesses have played significant roles in helping increase and expand economic growth, create and build economic stability in Thailand. Accordingly, the study of electronics businesses is significant in order to promote and enhance marketing opportunities in the severely competitive markets and environments. Hence, this study attempts to examine the relationships among competitive environment, organizational innovation and competitive advantage of electronics businesses in Thailand. To better understand the relationships, competitive environment is treated to become a negative determinant of affecting organizational innovation. Also, organizational innovation tends to be a key driver of positively enhancing competitive advantage. To verify the aforementioned relationships, competitive environment, organizational innovation and competitive advantage are clearly reviewed and discussed in the next section.

Interestingly, *competitive environment* is, firstly, the independent variable of the study and it is the situations, circumstances and views of general business operations in markets, including environmental heterogeneity, dynamism and uncertainty, such as the perceived complexity of a firm's environment; the perceived rates of change in the industry; and the perceived non-stability of its environment (Zahra and Bogner, 1999). Secondly, *organizational innovation* is the mediating variable of the study and it is an adoption of an internally generated or purchased device, system, policy, program, process, product, or service new to the adopting organization (Damanpour, 1991). Thirdly, *competitive advantage* is an outcome of firms' successful strategy implementation offering superior value to the customer through either unique benefits that offset a higher or lower prices than competitors for equivalent benefits (Wagner, 2006).

Here, the effects of competitive environment on competitive advantage of electronics businesses in Thailand via organizational innovation as the mediator are explicitly examined. The key research questions are (1) how competitive environment has an association with organizational innovation; (2) how organizational innovation has a relationship with competitive advantage; (3) whether the competitive environment-organizational innovation relationships are negative; and (4) whether the organizational innovation-competitive advantage relationships are positive.

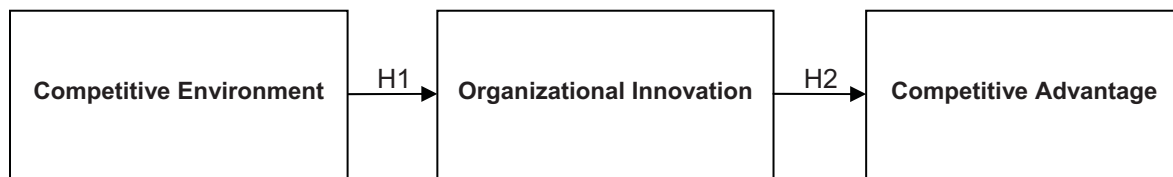
The rests of this study are organized as follows. First, existing significant literature in the areas and streams of competitive environment, organizational innovation and competitive advantage are reviewed. Likewise, the linkage between the concepts of the aforementioned variables is established, and the key research hypotheses of those relationships are developed. Second, the details of research methods are elaborated, including data collection, measurements, and statistics. Third, the analysis results of the current study are presented and correspondingly discussed. Finally, the findings of the study are

summarized and both theoretical and managerial contributions are pointed out, and suggestions for further research and the limitations of the study are also included.

## 2. RELEVANT LITERATURE REVIEW AND HYPOTHESES DEVELOPMENTS

In this study, the relationships among competitive environment, organizational innovation and competitive advantage are distinctively examined. Competitive environment is hypothesized to become the antecedent of organizational innovation. Also, organizational innovation is proposed to be the key factor of driving and explaining firms' competitive advantage. Thus, the conceptual framework of these relationships is depicted as shown in Figure 1.

**FIGURE 1**  
**MODEL OF THE RESEARCH RELATIONSHIPS**



### 2.1 Competitive Environment

Competitive environment is defined as situations, circumstances and views of general business operations in markets, including environmental heterogeneity, dynamism and uncertainty. It includes the perceived complexity of a firm's environment; the perceived rates of change in the industry; and the perceived non-stability of its environment, and an attempt to respond to these business events (Zahra and Bogner, 1999). In the literature, competitive environment plays a significant role in driving and explaining the relationships of firm strategy and organizational outcomes. For example, competitive environment has an important effect on the technology strategy-financial performance relationships (Zahra, 1996). Here, competitive environment is hypothesized to become the antecedent of organizational innovation. Mainly, it is the key factor of decreasing organizational innovation. Thus, firms under severely competitive environment are likely to enhance lesser organizational innovation. Accordingly, competitive advantage is negatively related to organizational innovation. Therefore, the illustrated relationship is hypothesized as shown below.

***Hypothesis 1: Competitive environment has a negative influence on organizational innovation.***

### 2.2 Organizational Innovation

Organizational innovation is defined as an adoption of an internally generated or purchased device, system, policy, program, process, product, or service new to the adopting organization (Damanpour, 1991). Besides, it is an appropriate resource to foster organizational performance and outcomes. It becomes a critical tool in helping drive and explain business excellence, competitive advantage, firm profitability, and organizational performance. Firms with higher organization innovation are likely to enhance superior competitive advantage, achieve better corporate performance and gain greater organizational sustainability in dynamic environments. Thus, organizational innovation can improve competitive advantage and firm performance in the competitive markets and environments (Montes et al., 2005). Also, organizational innovation has become a main strategy that promotes firms to succeed in the volatile markets and environments. In addition, there are several components of organizational innovation: administrative innovation, product innovation and technical innovation (Yamin et al., 1997); behavior innovation, product innovation, process innovation, market innovation, and strategic innovation (Liao and Wu, 2010); structural organizational innovation and procedural organization innovation (Armbruster et al., 2008); and administrative innovation and technical innovation (Damanpour, 1991). Accordingly, organizational innovation definitely supports firms to enhance competitive advantage, achieve better performance, survive and sustain in the future operations. Further, organizational innovation comprises changes in the structure and processes of an organization due to implementing new managerial and working concepts and practices, such as the implementation of teamwork in production,

supply chain management and quality management systems in order to gain superior competitive advantage, business performance and firm success (Armbruster et al., 2008). Hence, organizational innovation is positively related to competitive advantage. Therefore, the illustrated relationship is hypothesized as shown below.

**Hypothesis 2: Organizational innovation has a positive influence on competitive advantage.**

### **2.3 Competitive Advantage**

Competitive advantage is defined as an outcome of firms' successful strategy implementation. It can be obtained by offering superior value to the customer through either unique benefits that offset a higher or lower prices than competitors for equivalent benefits (Wagner, 2006). To achieve a competitive advantage, firms need to create positive value which equals or exceeds their competitors and outperforms other competitors. Thus, they have taken their competitive advantages for supporting excellent business performance. In building competitive advantage, both low cost competition and product differentiation become valuable strategies for helping firms compete in the markets (Tien et al., 2005). They become valuable strategies that help firms succeed in business operations and achieve superior firm performance and growth. Moreover, competitive advantage is a firm's perceived competitive strength relative to competitors in markets (Navarro et al., 2010). Truly, it is a direct antecedent of performance through the relative superiority of the firm's value offered that determines target customers' buying behaviors and the outcomes of this behavior for the performance. Basically, firms can create competitive advantage by conceiving new ways to conduct activities in the value chain for delivering superior value to customers (Weerawardena and O'Cass, 2004). Therefore, competitive advantage is a consequence of exploiting firms' organizational learning and strategic leadership in the competitive environments.

## **3. RESEARCH METHODS**

### **3.1 Sample Selection and Data Collection Procedure**

In this study, 398 electronics businesses in Thailand are the sample of the study. They were randomly chosen from the list in the database of the Department of Business Development, Ministry of Commerce, Thailand. A mail survey procedure via the questionnaire was used for data collection. The key participants in this study were managing directors or managing executives. With regard to the questionnaire mailing, 37 surveys were undeliverable because some firms were no longer in business or had moved to unknown locations. Deducting the undeliverable from the original 398 mailed, the valid mailing was 361 surveys, from which 139 responses were received. Of the surveys completed and returned, only 121 were usable. The effective response rate was approximately 33.51%. According to Aaker, Kumar and Day (2001), the response rate for a mail survey, without an appropriate follow-up procedure, if more than 20% is considered acceptable.

To test potential and non-response bias and to detect and consider possible problems with non-response errors, the assessment and investigation of non-response-bias were centered on two different procedures: (1) a comparison of sample statistics and known values of the population, such as number of employees, number of years in business, and amount of capital invested, and (2) a comparison of first wave and second wave data as recommended by Armstrong and Overton (1977). Neither procedure showed significant differences.

### **3.2 Variables**

All variables were obtained from the survey. *Competitive advantage* is the dependent variable of the study and it refers to the sustained capacity to gain, develop, and maintain a profitable market share (Li, Ragu-Nathan, Ragu-Nathan, and Rao, 2006). Four items were utilized to assess cost effectiveness, product quality, delivery dependability, new product development, and time to market.

*Competitive environment* is the independent variable of the study and it refers to situations, circumstances and views of general business operations in markets, including environmental heterogeneity, dynamism and uncertainty. Three-item scale is developed to evaluate the degree to which



firms perceive complexity of a firm's environment, rates of change in the industry and non-stability of its environment (Zahra and Bogner, 1999).

*Organizational innovation* is the mediating variable of the study and it is defined as a change in the structure and processes of an organization due to implementing new managerial and working concepts and practices (Armbruster et al., 2008). Two-item scale is utilized to measure the degree to which firms develop administrative innovation and technical innovation.

The control variables were also likely to affect the relationships, including firm experience, firm size, and firm capital. *Firm experience (FE)* may influence a firm's technological learning capacity, international business activities, and the profitability of foreign operations (Zahra, Ireland, and Hitt, 2000). It was measured by number of years a firm has been in existence. *Firm size (FS)* may affect the ability to learn and diversify operations, and to survive in the markets (Arora and Fosfuri, 2000). It was measured by number of employees currently registered in a firm. Finally, *firm capital (FC)* may impact the capacity of a firm to implement business strategies in order to achieve superior performance (Ussahawanitchakit, 2007). It was measured by the capital a firm has invested in doing business.

### 3.3 Methods

Factor analysis was firstly utilized to examine, measure, investigate, and assess the underlying relationships of a large number of items and to determine whether they can be reduced to a smaller set of factors. The factor analyses conducted were done separately on each set of the items representing a particular scale due to limited observations. With respect to the confirmatory factor analysis, this analysis has a high potential to inflate the component loadings. Thus, a higher rule-of-thumb, a cut-off value of 0.40, was adopted (Nunnally and Bernstein, 1994). All factor loadings are greater than the 0.40 cut-off and statistically significant. The reliability of the measurements was secondly evaluated by Cronbach alpha coefficients. In the scale reliability, Cronbach alpha coefficients are greater than 0.70 (Nunnally and Bernstein, 1994). The scales of all measures appeared to produce internally consistent results; thus, these measures are deemed appropriate for further analysis because they express an accepted validity and reliability in this study. Table 1 presents the results for both factor loadings and Cronbach alpha for multiple-item scales used in this study.

**TABLE 1**  
**RESULTS OF MEASURE VALIDATION**

Items	Factor Loadings	Cronbach Alpha
Competitive Advantage(CA)	.85-.91	0.82
Competitive Environment (CE)	.80-.87	0.91
Organizational Innovation (OI)	.81-.87	0.80

The ordinary least squares (OLS) regression analysis is used to test and examine the hypothesized relationships of competitive environment, organizational innovation and competitive advantage. Because all dependent variable, independent variable, mediating variable, moderating variable, and control variables in this study were neither nominal data nor categorical data, OLS is an appropriate method for examining the hypothesized relationships (Aulakh, Kotabe and Teegen, 2000). With the need to understand the relationships in this study, the research model of the aforementioned relationships is formulated as follows.

$$\text{Equation 1: } OI = \beta_{01} + \beta_1 CE + \beta_2 FE + \beta_3 FS + \beta_4 FC + \varepsilon$$

$$\text{Equation 2: } CA = \beta_{02} + \beta_5 OI + \beta_6 FE + \beta_7 FS + \beta_8 FC + \varepsilon$$

## 4. RESULTS AND DISCUSSION

Table 2 shows the descriptive statistics and correlation matrix for all variables. With respect to potential problems relating to multicollinearity, variance inflation factors (VIFs) were used to provide information on

the extent to which non-orthogonality among independent variables inflates standard errors. The VIFs range from 1.02 to 4.18, well below the cut-off value of 10 as recommended by Neter, Wasserman and Kutner (1985), meaning that the independent variables are not correlated with each other. Therefore, there are no substantial multicollinearity problems encountered in this study.

**TABLE 2**  
**DESCRIPTIVE STATISTICS AND CORRELATION MATRIX**

Variables	CA	CE	OI	FE	FS	FC
Mean	3.70	4.00	3.97	12.25	224.00	75.00
s.d.	0.69	0.70	0.70	5.95	139.00	59.50
CA						
CE	-0.43***					
OI	0.69***	-0.56***				
FE	0.23	-0.04	0.27**			
FS	0.38***	-0.10	0.29**	0.61***		
FC	0.36***	-0.04	0.31**	0.47***	0.63***	

\*\*p<.05, \*\*\*p<.01

**TABLE 3**  
**RESULTS OF OLS REGRESSION ANALYSIS<sup>a</sup>**

Independent Variables	Dependent Variable			
	OI	OI	CA	CA
CE		-0.31** (0.07)		
OI				0.63*** (0.10)
FE	0.16 (0.14)	0.15 (0.14)	-0.01 (0.14)	-0.10 (0.11)
FS	-0.03 (0.19)	-0.01 (0.19)	0.25 (0.18)	0.27 (0.14)
FC	0.26 (0.17)	0.25 (0.17)	0.15 (0.17)	-0.01 (0.13)
Adj R <sup>2</sup>	0.16	0.25	0.10	0.46

\*\*p<.05, \*\*\*p<.01, <sup>a</sup> Beta coefficients with standard errors in parenthesis

Table 3 presents the results of OLS regression analysis of the relationships among competitive environment, organizational innovation and competitive advantage. *Competitive environment* has a significant negative association with organizational innovation ( $b_1 = -0.31$ ,  $p < 0.04$ ). Besides, it refers to the situations, circumstances and views of general business operations in markets, including environmental heterogeneity, dynamism and uncertainty, such as the perceived complexity of a firm's environment; the perceived rates of change in the industry; and the perceived non-stability of its environment, and an attempt to respond to these business events (Zahra and Bogner, 1999). Accordingly, firms with greater competitive environment are likely to achieve lesser organizational innovation. Then, competitive environment has a negative antecedent of firms' organizational innovation. **Thus, Hypothesis 1 is supported.**

Interestingly, *organizational innovation* has an important positive relationship with competitive advantage ( $b_5 = 0.63$ ,  $p < 0.01$ ). Mainly, it is an adoption of an internally generated or purchased device, system, policy, program, process, product, or service new to the adopting organization (Damanpour, 1991). It is an appropriate resource to foster business excellence, competitive advantage, firm profitability, and organizational performance. Firms with higher organization innovation are likely to enhance superior competitive advantage, achieve better corporate performance and gain greater organizational sustainability in dynamic environments. Thus, organizational innovation is a key driver of improving

competitive advantage and firm performance in the competitive markets and environments. Hence, it has a positive determinant of increasing firms' competitive advantage. **Thus, Hypothesis 2 is supported.**

## **5. CONTRIBUTIONS AND FUTURE DIRECTION FOR RESEARCH**

### **5.1 Theoretical Contribution and Future Direction for Research**

This study provides a clearer understanding of the relationships among competitive environment, organizational innovation and competitive advantage. It initials unique theoretical contributions expanding on previous knowledge and literature of competitive environment, organizational innovation and competitive advantage. It also attempts to comprehend the concepts of the aforementioned constructs in the same model. According to the results of this study, the need for further research is apparent. Because this study finds that competitive environment has a significant negative effect on organizational innovation; and organizational innovation has an important positive influence on competitive advantage, future research is thus needed to verify and expand the research findings and outcomes through collecting data from different population and/or a comparative population in order to widen the perspectives.

### **5.2 Managerial Contribution**

This study helps managers identify and justify the key components that may be more critical in a rigorously competitive market. Managers should effectively manage and utilize competitive environment and organizational innovation to gain competitive advantage. These managers may put more emphasis on competitive environment, organizational innovation and competitive advantage than on other variations. In the challenge of competitive environment and organizational innovation, managers can utilize these concepts to enhance competitive advantage in the organization in addition to plan to expand their other strategies to include or integrate to an advanced business operations in order to continuously maintain and increase the levels of business excellence and competitiveness. To maximize the benefits of competitive environment, organizational innovation and competitive advantage, managers should provide other resources to support its effectiveness and create new opportunities in the markets. Likewise, managers should pay attention on competitive environment, organizational innovation and competitive advantage and implement them for the markets.

## **6. CONCLUSION**

Nowadays, electronics businesses explicitly create the amount of economic values and potentially increase economic growth in Thailand. Hence, the objective of this study is to examine the associations among competitive environment, organizational innovation and competitive advantage of electronics businesses in Thailand. Accordingly, this study distinctively tests the competitive environment-organizational innovation relationships and the organizational innovation-competitive advantage relationships.

Here, 121 electronics businesses in Thailand were chosen as the sample of the study. With the results of the study, competitive environment has a significant negative influence on organizational innovation. Likewise, organizational innovation has an important positive impact on competitive advantage. In summary, competitive environment definitely plays the significant role in negatively explaining organizational innovation; and organizational innovation is the key determinant of positively driving competitive advantage. For verifying and expanding the research findings and outcomes, future research is needed to collect data from other population and/or a comparative population in order to widen the perspectives.

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# HIGH TECH MARKETING AND ITS CHARACTERISTICS IN THE MARKETING MIX – A SYNOPSIS AND CRITICAL DISCUSSION OF EXISTING APPROACHES AND THEIR SIGNIFICANCE FOR RESEARCH AND TEACHING

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## ABSTRACT

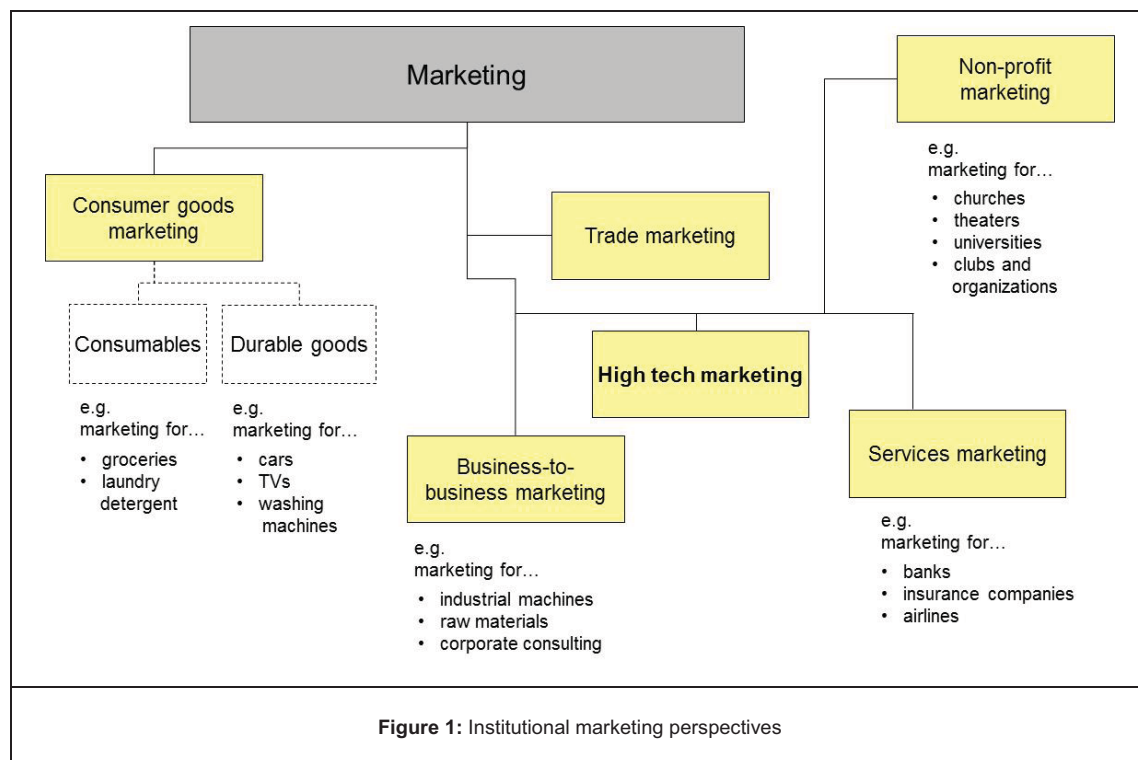
*What is “high tech marketing,” and what are its differences when compared to other fields of marketing and marketing in general? These are the questions that will be addressed in the following. Using a literature overview, a critical discussion will attempt to determine whether there are specific characteristics found within high tech marketing and, if so, what they are; what consequences they have for the marketing mix; and what this means for practice, teaching, and research.*

**Keywords:** High Tech Marketing, High Tech Markets, Institutional Marketing Perspective, Marketing for High Tech Enterprises

## 1. THE INSTITUTIONAL MARKETING PERSPECTIVE AND HIGH TECH MARKETING

The establishment of “marketing” as its own discipline traces its history back 60-70 years (see e.g. Bruhn 2010, pp. 13; Homburg/Kuester/Krohmer 2009, pp. 5). Its focus in the beginning was on large companies and mass markets, particularly in the consumer goods realm (see e.g. Grønhaug/Möller 2005, 96).

The years that followed showed that marketing is in fact a multifaceted field that in some cases requires a differentiated approach (see e.g. Bruhn 2003, xiv; Homburg/Krohmer 2006, pp.11; also see e.g. Grønhaug/Möller 2005, 92; Mohr/Sengupta/Slater 2010, xvi).



Along with the instrumental perspective (which is often categorized into the classic marketing instruments of product, price, promotion, and place, “4 p’s”, McCarthy 1960), today also sees the inclusion of an institutional perspective placing the marketing particularities and characteristics found in differ-

ent industries at the forefront. In addition to (classic) consumer goods marketing, this discussion now also includes trade marketing, services marketing, business-to-business (B2B) marketing, and non-profit marketing (see e.g. Homburg/Kuester/Krohmer 2009, pp. 325; Bruhn/Georgi 2006, 304; Armstrong/Kotler 2007, pp. 148; Siems 2009, pp. 289; Zeithaml/Bitner/Gremler 2009; Backhaus/Voeth 2010). *High tech marketing*, which will be discussed in detail in this paper, can be seen as a specialized addendum to this list (see Figure 1).

High tech marketing is particularly interesting for Western industrial nations where high tech is often a key (if not *the* key) competitive advantage. That's why it's so surprising that such a relatively small amount of literature, most of which is found in a few general marketing textbooks, addresses this specific topic. Either this area is being underestimated, or its unique characteristics are so minimal that a separate observation of it is not required. Grønhaug/Möller (2005, 92) address this question as follows:

"One possible, but not a very idealistic reason is that somebody wants to carve his or her own "territory", i.e. someone wants to construct and label a specific field or phenomena [to] which the initiator's name(s) and activities can be attached and – hopefully – bring fame and fortune. Another – and probably more acceptable – reason is that such narrowing of focus allows for concentrating on specific problems having some communalities allowing for the development of more elaborated concepts, theories and methodological approaches to deal with these specific problems more adequately not covered in depth in the mother discipline. Development of specialized sub-disciplines may, however, have draw-backs (Grønhaug/Möller 2005, 92)."

These issues will be examined below. The existing literature will first be used to provide an overview of what is to be understood under the concept of high tech marketing, and what its specific characteristics are that can be derived for the marketing mix. This will be followed by a critical discussion on whether and to what degree high tech marketing can be treated as its "own" field of study, and which implications result from this for research and practice.

## **2. THE EMERGENCE OF HIGH TECH MARKETING, THE TERM ITSELF, AND ITS CHARACTERISTICS – THE STATE OF EXISTING LITERATURE**

According to the influential 1989 article by Moriarty/Kosnik (Moriarty/Kosnik 1989, 7) from the Harvard Business School, the first discussions on the possible existence of high tech marketing began at the end of the 1970s. Regis McKenna and William Davidow are considered pioneers in this area (Moriarty/Kosnik 1989, 7; Meldrum 1995, 46) who made a name for themselves in Silicon Valley. McKenna in particular addresses the aspects of communication, while Davidow takes a more comprehensive look at the topic of high tech marketing (Meldrum 1995, 46).

High tech marketing can generally be understood as having its "overall strategic and operative decisions and resulting marketing activities directed towards high tech markets" (n.n. 2012a). The question results regarding just what "high tech" is, and which characteristics it has, particularly when it comes to marketing.

When looking at the term "high tech" and how it might fit into a specific product categorization, it can be seen that it is used very inconsistently (see e.g. Grønhaug/Möller 2005, 94). However, the literature does discern the following approaches, which can help provide a general idea of what high tech involves (Yadav/Swami/Pal 2006, pp. 59; Mohr/Sengupta/Slater 2010, pp. 9):

- Input-based view
- Output-based view
- Combined approaches

With the *input-based view*, the technology applied and/or the kind of resources that are applied to *generate* a service are seen as decisive (see e.g. Yadav/Swami/Pal 2006, 61; Mohr/Sengupta/Slater 2010, pp. 9). The delineating criteria here include e.g. R&D expenditures, the amount of certain employee groups/qualifications (e.g. engineers), how many patents a company has, etc. (Mohr/Sengupta/Slater 2010, pp. 9). In some instances, there is a further delineation within the input-

oriented high tech definition into “middle technology/high level technology” (3-8% of revenue is spent on R&D) and “high technology/leading edge technology” (>8.5%, e.g. bio- and nanotechnology) (see e.g. Fraunhofer 2000; Cacciatore 2006, 12; OECD 2011a; OECD 2011b).

The main disadvantage of the input-oriented view is that the output in some instances is not a high tech product (Mohr/Sengupta/Slater 2010, pp. 9), which leads to a misleading use of the terminology.

As opposed to the input-based view, the *output-based view* understands the *generated service* as the factor determining the difference between high and low tech (see e.g. Yadav/Swami/Pal 2006, 61). Indicators here include e.g. the “(degree of technological) sophistication”, “complexity”, “advanced technology”, and “the degree of technical progress” of the service produced (Yadav/Swami/Pal 2006, 62). This terminology is in accordance with e.g. the IRS in the United States, whose panel of experts has defined biotechnology, life sciences technology, optoelectronics, information and communications, electronics, flexible manufacturing, advanced materials (e.g. optical fiber cable), aerospace, weapons, and nuclear technology as belonging to the “high tech” realm (Mohr/Sengupta/Slater 2010, pp. 9). Similarly, the NAICS (North American Industry Classification System) categorizes 45 high tech industries into three main (output oriented) realms: high tech manufacturing, communication services, and computer-related services (Mohr/Sengupta/Slater 2010, pp. 9). From a scientific perspective, determining these delineations is far more problematic than with the input-oriented view (Yadav/Swami/Pal 2006, pp. 60p; Mohr/Sengupta/Slater 2010, pp. 9).

There are also *combined approaches* in addition to the purely input- and output-oriented views. These apply a combination of several criteria. One well-known approach is e.g. the “techno paradigm” (Kodama 1991) that states among other things that a classification should depend upon several criteria: manufacturing inputs, business dynamics, invisible competitors, demand articulation, and technology fusion (for more, and for additional combined approaches also see e.g. Meldrum 1995, 48; Yadav/Swami/Pal 2006, pp. 62). High tech/low tech/no tech are further examples of opportunities for classification and delineation that for reasons of space will not be addressed here in further detail (n.n. 2012c).

It's clear that an exact classification into high and low tech is not without its difficulties. It also needs to be kept in mind that technological progress results over time in new dynamics that make delineations even more difficult: today's high tech may very well be tomorrow's low tech (see e.g. Hasenauer et al. 1994, 45; Bieker 1995, 17; Yadav/Swami/Pal 2006, p. 63; n.n. 2012c). Technological dynamics have to be factored in as well, i.e. new, supplementary, or substituting technologies, especially so-called “disruptive technologies” (for more see Christensen 1997; Bower/Christensen 1995; Danneels 2004; Yu/Hang 2010). What's important here is to continually question whether a new technology is actually replacing an old one, or simply expanding upon it (for a similar contribution, see e.g. Rosenshine 1995, 184).

In spite of these delineation problems, and despite the differences found in each industry, the literature is in fact able to determine a few central characteristics of high tech and, with this, some suggestions for what the central aspects of high tech marketing are. This includes in particular *uncertainty* as an overarching, central feature (Bieker 1995, 19; Rosen/Schroeder/Purinton 1998, 3; Cacciatore 2006, 23; Yadav/Swami/Pal 2006, p. 63; Mohr/Sarin 2009, 92; Mohr/Sengupta/Slater 2010, 11; Gerhard et al. 2011; n.n. 2012a).

Uncertainty is seen both with the customers as well as with manufacturers (Moriarty/Kosnik 1989, pp. 8; also see Meldrum 1995, 47; Rosen/Schroeder/Purinton 1998, 3) in different areas such as market uncertainty, technological uncertainty, and competitive volatility (Moriarty/Kosnik 1989, 9; Grønhaug/Möller 2005, 94; Mohr/Sengupta/Slater 2010, 11).

The following questions are examples of *market uncertainty* sources (Moriarty/Kosnik 1989, 9; also see Yadav/Swami/Pal 2006, 60; Mohr/Sengupta/Slater 2010, 11):

- “What needs might be met by the new technology?
- How will needs change in the future?
- Will the market adopt industry standards?
- How fast will the innovation spread?
- How large is the potential market?” (Moriarty/Kosnik 1989, 9)

The following lists examples of *technological uncertainty* sources (Moriarty/Kosnik 1989, 9, also see Yadav/Swami/Pal 2006, 61; Mohr/Sengupta/Slater 2010, 11):

- “Will the new product function as promised?
- Will the delivery timetable be met?
- Will the vendor give high-quality service?
- Will there be side effects of the product or service?
- Will new technology make ours obsolete?” (Moriarty/Kosnik 1989, 9)

Another important factor found when it comes to technological uncertainty is e.g. that several technologies often compete to be recognized as the industry standard. And even if this status is achieved, it is continually being threatened by new technological developments (n.n. 2012a).

Along with these two uncertainties, the literature in some instances also mentions *competitive volatility* when it comes to questions such as (Shanklin/Ryans 1987; Yadav/Swami/Pal 2006, 60; Mohr/Sengupta/Slater 2010, 11):

- “Who will be the new competition in the future?
- What competitive tactics will be used?
- What products will be competed with?” Shanklin/Ryans 1987; Yadav/Swami/Pal 2006, 60; Mohr/Sengupta/Slater 2010, 11)

Complexity is often seen as an additional high tech characteristic (Rosen/Schroeder/Purinton 1998, 3; Yadav/Swami/Pal 2006, p. 63), although a categorization of this is difficult. The German *Finanzlexikon* manages to shed light on it with humor: “High tech is everything that the financial guys don’t even have a chance of understanding. Low tech is the stuff that the financial guys still might have a chance of understanding” (n.n. 2012c).

Additional characteristics of high tech marketing that are mentioned include not-yet-exhausted market potential as well as the particular importance of technological know-how (see e.g. n.n. 2012a).

The following will discuss in detail what particular attributes can be derived from these marketing mix characteristics.

### 3. MARKETING MIX CHARACTERISTICS: THE CURRENT STATE OF LITERATURE

#### 3.1 Marketing instrument: product

The marketing instrument of *product* is often seen as the central instrument of the high tech marketing mix (Schaible/Hönig 1996, 55; Grønhaug/Möller 2005, 97). Along with the need for permanent product information, this also involves implementing industry standards, as well as countering the technological uncertainty mentioned above (n.n. 2012a).

Due to the instrument of product playing such a significant role in the high tech realm, the literature sometimes very explicitly states that product decisions should be handled *directly by the boss or top management* (Schaible/Hönig 1996, pp. 55).

Schaible/Hönig describe it very clearly: “Top managers of companies who are not as successful as they might be go to their trade show stand in the morning before the doors open, take a look at the exhibit and products, and disappear as soon as the customers start arriving. What they don’t understand is that customers don’t just want to see the technicians, but the people behind the product who are making the key decisions as well. Even though hearing what the customers have to say isn’t always the most enjoyable thing to do, it’s precisely here that you’ll find a massive potential for product improvement. There’s nobody who’s better at telling you how the product can be improved than the customer. It’s these feedbacks from the customers that the top management needs to hear directly from the horse’s mouth, not filtered through a bunch of different organizational layers. We simply can’t say it enough: innovative, future-oriented, and customer-oriented product decisions need to be one of the main tasks of

top management!” (Schaible/Hönig 1996, p. 55, originally in German and here translated into English).

Additional aspects are necessitated by the *product complexity* mentioned above (also see Moriarty/Kosnik 1989, pp. 10; Schaible/Hönig 1996, pp. 54; Duessel 2012; n.n. 2012a):

- Services such as courses/maintenance are very important (n.n. 2012a)
- The expert knowledge of employees (about brands/products/customer needs) is more complex and, at the same time, more important
- Customer demand for systems selling has to be kept in mind when applicable (Schaible/Hönig 1996, 57)
- The cooperation and communication between R&D, production, and marketing (Moriarty/Kosnik 1989, 13). Here, it in some cases can be a good idea to integrate the customer into product planning and/or creation (“customer co-creation”, see e.g. Schaible/Hönig 1996, 56; Mohr/Sarin 2009, 93)

The last point in particular could use a second look: There are entrepreneurs active in the high tech realm who get their innovation off the ground with a large amount of their own technical know-how. This can however become a problem when product development is conducted only using technical inputs while not paying enough attention to the feedback coming from customers (Rosen/Schroeder/Purinton 1998, 1). Here, it becomes a clear task of those in the company making decisions about products to integrate the customer’s viewpoint into product development.

Rosen/Schroeder/Purinton (1998, 2) show a number of different examples from the past where this kind of issue occurred. For example, when video cassettes first came on the market, Sony’s Betamax was considered to be “better” than VHS because of its picture quality. However, the customer hardly noticed this, and instead preferred the longer running time offered by VHS.

The comment by Backhaus/Voeth (2010, 17) is also interesting. Here, they talk about a “technology push strategy” and how it is *not* decisive for customer orientation whether absolutely everything derives from market research and/or customers - the key instead is whether the decisions made about a product have at least factored in this feedback (for more, also see Shanklin/Ryans 1984, pp. 166 and Mohr/Sarin 2009, 92).

The literature specifically mentions approaches that achieve a connection between the technical view with a marketing perspective such as the “quality function deployment” (Moriarty/Kosnik 1989, 13; Mohr/Sengupta/Slater 2010, 201). The unchanged relevance of these kinds of approaches is shown by current publications that in some cases go well beyond a simple integration of the customer’s viewpoint into the product development process. For example, building upon the foundational idea of quality function deployment, Gerards et al. (2011) show how customers can be provided with purchasing assistance when it comes to complex high tech consumer goods such as digital cameras by “transmitting” technical features into how a product can actually be used. Real benefit for the customer is the result, achieving a product selection and/or assembly (which is also possible as part of a mass customization) that is designed around the customer’s individual preferences.

It’s also important in high tech marketing to maintain an effective *segmentation* of certain customer groups and, especially in the starting phase, a clear *focus* on specific customers. Moriarty/Kosnik (1989) mention Apple founder Steve Jobs who, when introducing his personal computer, focused specifically on an introduction in the college and university markets. The authors also state how:

“Partly as a result of an engineering-driven heritage, many technology companies believe the key [to] success is in creating great products, then selling them to anyone who has the money. But the faster technology and markets change, the more impossible it is to be all things to all customers” (Moriarty/Kosnik 1989, 15).

Schaible/Hönig (1996) put it into even clearer terms:



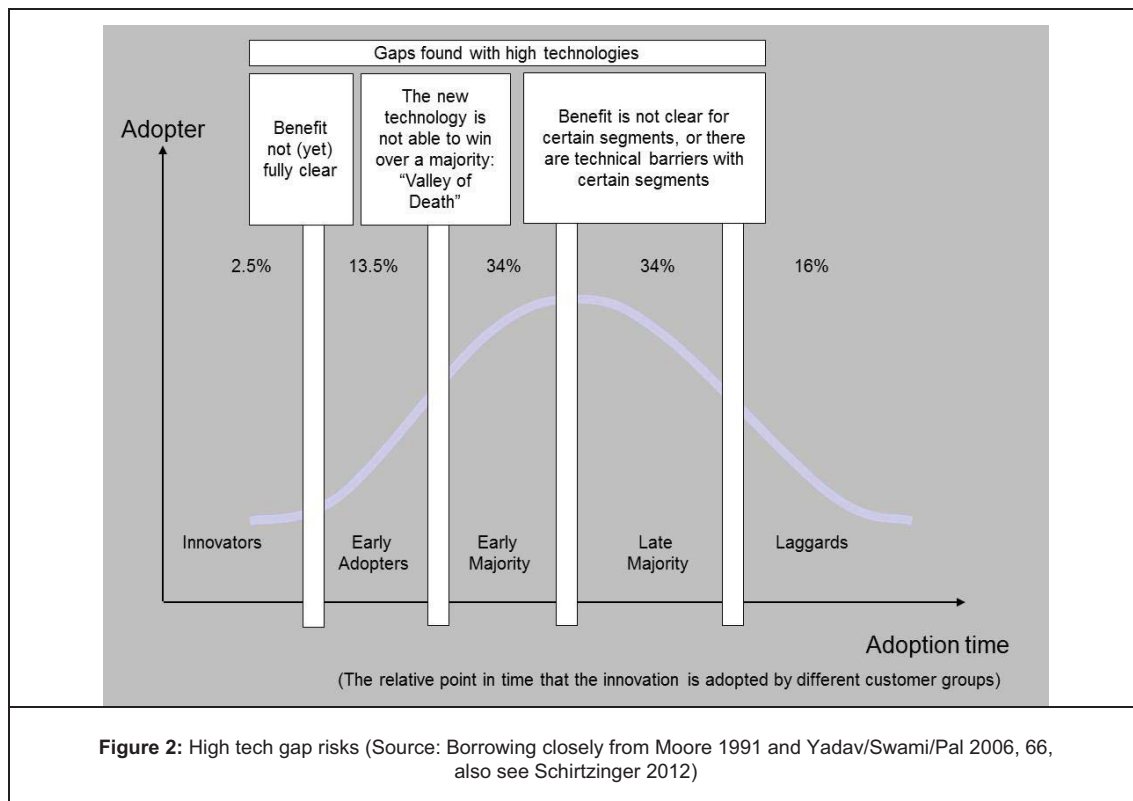
“Most of the unsuccessful high tech companies out there have failed because they never clearly defined the market segments in which they could have been successful, or because they tried to operate in specific market segments that were not a viable option for them. You can talk all you want about vast market potential, but until you specifically define the most important market segments, every other activity is going to be for naught” (Schaible/Hönig 1996, 64, originally in German and here translated into English).

*Market introduction* is another product decision aspect found with high tech products. Two factors are important here: market entry and diffusion.

The literature discusses among other things just exactly when the “right” *market entry time point* for new products is. When it comes to this, the benefits of being a “pioneer” who is the first on the market need to be weighed against the risks that come with not-fully-tested, incomplete products that could still have a bug or two in them (Rosen/Schroeder/Purinton 1998, et al. 13). The *diffusion process* is also of key importance (see among others Rosen/Schroeder/Purinton 1998, pp. 4; Grønhaug/Möller 2005, 97). According to the progression provided by Rogers (Innovators / Early Adopters / Early Majority / Late Majority / Laggards, see Rogers 1983; Rosen/Schroeder/Purinton 1998, pp. 4), it’s important to keep a close eye on the possible gaps between the categories shown in Figure 2. Here, a so-called “valley of death” may occur between early adopters and the early majority (Moore 1991, also see Yadav/Swami/Pal 2006, 66; Schirtzinger 2012). Yadav/Swami/Pal (2006, 66) state how:

“Many high technology firms fail because they are unable to make the transition from early adopters to mainstream customers” Yadav/Swami/Pal (2006, 66).

There’s also a real chance that a gap might occur e.g. between innovators and early adopters when the usefulness of a new technology is not clear to the majority of its potential users. There’s also the risk that a gap may occur between the early majority and the late majority in the case where the late majority lacks the technical understanding on how to use a new technology, or simply doesn’t obtain great benefit from it (Yadav/Swami/Pal 2006, 66, also see Figure 2). This is where the phenomenon known in the literature as “technology readiness” can start to play an important role (see e.g. Yadav/Swami/Pal 2006, 66; for a foundation see Parasuraman/Colby 2001).



In light of the great importance diffusion has for high tech, it's not surprising that factors corresponding to diffusion are seen as success criteria in high tech marketing. Hasenauer et al. (1994, 48) name market entry time (time to market to break-even or planned ROI); getting a head start on innovation (innovation half life); and the profitability of project capital (ROI of the project capital invested) as efficiency criteria of high tech marketing,

### 3.2 Marketing instrument: price

With price, the first thing that needs to be noted is that generally, low prices and discounts are not seen as a key sales factor with high tech. More important is using innovation to achieve a greater service benefit and quality for the customer (see e.g. Schaible/Hönig 1996, 56 and 59). With this in mind, it is also assumed that the importance of having low prices is often overestimated by companies (Schaible/Hönig 1996, 59), who in turn should be cautioned against pursuing a low-price strategy or entering into price wars (Schaible/Hönig 1996, pp. 57). In the same way, the temptation should be avoided to "improve" the diffusion discussed above via pricing (Schirtzinger 2012). One hotly-debated issue related to this topic is skimming or penetration strategies (Rosen/Schroeder/Purinton 1998).

What needs to be kept in mind is that high tech is less concerned with price reductions, and far more concerned with service advantages, technological advances, and the customer's awareness of them, which in turn aims to increase their willingness to pay and achieve (relatively) higher prices (Schaible/Hönig 1996, 58; n.n. 2012a). Schaible/Hönig (1996, 58, originally in German and here translated into English) mention studies that have shown how "successful German high tech companies who have enjoyed good profits over the years are those who tend to be in the upper price range with their products" and specifically warn against an orientation towards foreign competitors (particularly those from Asia) and their low-price approach to business (Schaible/Hönig 1996, 58). The authors (understandably) recommend a "price implementation with the help of consultation" for high tech markets (Schaible/Hönig 1996, 10).

But even though high tech can offer an array of service and benefits, a problem can still be found in the implementation of higher prices: Compared to other industries, because of the uncertainties mentioned above (see e.g. Figure 2), it may in some cases be difficult to determine the actual willingness to pay of (potential) customers (Grønhaug/Möller 2005, 98). This same problem can be found in other specialized areas of marketing, especially in entrepreneurial marketing which experiences similar issues (Siems/Kraus/Pollok 2012).

This aspect leads to still another general point that should be mentioned. As is the case with the other marketing instruments, in light of the often limited applicability of "traditional" quantitative *market research methods*, there is a need to consider alternative approaches, particularly qualitative market research (see e.g. Shanklin/Ryans 1984; Duessel 2012; also see Schirtzinger 2012; Yadav/Swami/Pal 2006, pp. 67). In addition, an investigative approach that goes beyond narrow, "traditional" market research to include and comprehend the increasing level of innovation of a new high tech product can be helpful in how it could e.g. include visits with (potential) customers, and understands and applies customer-driven innovation and customer co-creation as a part of "market research" (Mohr/Sengupta/Slater 2010, pp. 188).

An additional challenge facing pricing for high tech is when prices – particularly in the business-to-business realm – need to be negotiated. For more on this, the author refers to the extensive literature on the topic of B2B marketing (see e.g. Backhaus/Voeth 2010, 246; Moosmayer/Kunter/Siems 2012).

### 3.3 Marketing instrument: promotion

Promotion (including "communication" and its instruments) is a significant instrument for high tech companies. The head of a consulting company Duessel makes it clear:

"For high-tech marketing, this means most of all that it will be increasingly important to skillfully implement marketing communication instruments. It's no longer enough to just make inno-

vative products with exciting features. Today, you have to make their benefits clear" (Duessel 2012, originally in German and here translated into English).

One particular facet can be seen: The communication instrument has its primary focus on the announcement of information about new products and the technology they are based upon, as well as the communication of product use and benefit (Rosen/Schroeder/Purinton 1998; n.n. 2012a). Here, Yadav/Swami/Pal (2006) for example see a clear difference to low tech markets and state how:

"The focus of a high technology product is on problem solution whereas the focus of a low technology product is on brand attributes. (...) The communication for a high technology product should have high information content" (Yadav/Swami/Pal 2006, 63).

One particular challenge here is that the product and its benefits must first be *understood* (Schaible/Hönig 1996, 61; Rosen/Schroeder/Purinton 1998, 5). This can be a difficult task, because in some cases (due to the uncertainties described above) a customer might not even be aware of a product category and/or doesn't initially understand a product's benefit (see e.g. Grønhaug/Möller 2005, 98). This is why the literature sometimes talks about "market education" (see e.g. Grønhaug/Möller 2005, 94) or "customer education" (Yadav/Swami/Pal 2006, 63).

In dealing with this issue, Schaible/Hönig (1996) recommend with high tech to not just apply product advertising, but to also use their advertising as an opportunity to showcase some of the product's applications, the customer benefit, as well as the company's technological competence (Schaible/Hönig 1996, 62). In the case of technical complexity, or if the technology is difficult to present, one idea could be to boil them down to analogies. For example, instead of presenting the technology, you could show an animal or plant instead that makes an otherwise hard-to-understand function or feature of a new product clear to the customer (Schaible/Hönig 1996, 62).

There's also a somewhat heated discussion when it comes to communication about whether it should be of a more emotional or rational nature. There are on the one hand successful examples of a very emotional – and successful – product presentation (e.g. Apple, see Kadanoff 1993, 10). Other studies show on the other hand the importance of rationality when it comes to high tech communication (see e.g. Gerhard et al. 2011, 342). So depending on the service and instrument of communication, a differentiated perspective of this issue is probably what needs to be kept in mind the most.

The marketing instrument of "communication" also includes a number of other "partial" instruments (see e.g. Homburg/Kuester/Krohmer 2009, pp. 252; Mohr/Sengupta/Slater 2010, pp. 374). The literature contains a relatively scattered amount of information on the value of these instruments for high tech:

- The focus of these instruments tends to lean away from classic advertising/promotion, and more towards customer care and consultation (n.n. 2012a).
- Particular importance is placed upon word-of-mouth communication because this can play an important role in the above-mentioned diffusion process (see e.g. Rosen/Schroeder/Purinton 1998, 7).

Looking at the amount of these additional partial instruments that fall into the "promotion" category, it's a good idea to keep in mind the other options they might provide (depending on the instrument) for a specific observation of high tech promotion (for more see Gerhard et al. 2011).

Another special characteristic can be seen when a high tech company has just been started. According to the literature on "young" enterprises, a particular problem found here is that on the one hand (as discussed above), communication plays a major role. However, in these companies, there is often a lack of experience with it, and in some cases, companies may be so technology-focused that their communication actually ends up neglecting the customer (for more, see e.g. Siems/Kraus/Bättig 2009).

### 3.4 Marketing instrument: place

There are particular characteristics found in the literature regarding the instrument of place when it comes to high tech. Due to the importance of the direct contact needed for information to and about customers, as well as the importance placed upon trust and relationship management, short distribution channels are seen as an advantage (Yadav/Swami/Pal 2006, p. 63; n.n. 2012a). In extreme cases, and in the industrial realm in particular, direct sales are what typically achieve them the best (Schaible/Hönig 1996, 60).

When it comes to diffusion, the instrument of place is important as well, because in the starting phase of a company, the sales and distribution channel that has been selected needs to reach the innovators in particular.

It can be seen that sales – as well as the sales force – need to (re)present the customer benefit. Because of the product complexity that high tech products often have (see above), this requires salesmen and –women with outstanding qualifications.

In the same way found with services marketing (see e.g. Magrath 1986; Bruhn/Georgi 2006, 304; Zeithaml/Bitner/Gremler 2009, pp. 347; Siems 2010, 91), the significance of personnel with high tech (see above; also see e.g. Moriarty/Kosnik 1989, pp. 10; Duessel 2012) is such a significant factor that it's sometimes suggested as an additional P to the other "classic" 4 Ps of marketing: people.

### 3.5. Marketing instrument: people

As seen above (Moriarty/Kosnik 1989, 10pp.; Duessel 2012), it's clear that the management of personnel in high tech markets is very important from a marketing perspective. Personnel are tasked with (among other things) maintaining effective customer care, communication with the customer (explaining and convincing, see above) and, depending on the industry, negotiation (e.g. in the B2B realm, including price negotiation). This places high expectations on personnel, because in some cases extensive technical knowledge is required, while the uncertainties described above also require an appropriate amount of attention.

Continual employee training is therefore extremely important. The same is also true of the selection and training of personnel when they first start to work for a company (Moriarty/Kosnik 1989, pp. 11).

## 4. CRITICAL DISCUSSION

### 4.1 High tech marketing as its own field of research and study?

This paper has attempted to provide an overview of the "state of the art" of high tech marketing. The following can be determined in light of the question posed at the start about whether high tech marketing is actually its own separate field within marketing (also see n.n. 2012a, who arrives at a similar conclusion):

There are a variety of characteristics that typify the high tech market (assuming otherwise heterogeneous conditions). This particularly includes the high level of uncertainty with the seller, customer, as well as when it comes to product complexity. There's no question that characteristics can be (as shown) derived here for marketing as well as the marketing mix, and that can be important and even exciting for the companies impacted by them. A specialized view of marketing for high tech therefore makes sense. One limitation that should however be mentioned is that because of the heterogeneity of high tech companies and services, all findings on this topic need to be carefully considered and adapted accordingly in light of the company being examined and/or the service being offered.

It should be kept in mind that the characteristics of high tech marketing in some ways are the result of a particular *emphasis* within (general) marketing thinking, and not necessarily brand new approaches. Things like diffusion and communication are especially important, and it's a very good idea to take a closer look at these specific attributes. Even still, both of these aspects have already been discussed within "traditional" and "general" marketing theory (see e.g. Homburg/Kuester/Krohmer 2009, pp. 124), and in some instances for a relatively long time (see e.g. Russ/Kirkpatrick 1982, pp. 161). And there is also a large amount of overlap between high tech and other marketing realms, especially B2B

marketing and industrial goods marketing (also see n.n. 2012a; Abratt 1986), marketing for young enterprises (“entrepreneurial marketing”, see e.g. Siems/Kraus/Bättig 2009; Siems, F./Kraus, S./Pollok, P. 2012), and services marketing (e.g. when it comes to customer integration, see e.g. Bruhn/Georgi 2006, 442).

Furthermore, the innovation found with high tech marketing when compared to “traditional” marketing is partially a result of the theories from other realms of business studies – especially technology and innovation management as well as entrepreneurship – receiving a closer, more intensive treatment than what is found in traditional marketing literature, such as the approaches that involve technological development and customer co-creation and co-production. So more accurately, the “newness” of high tech marketing is in actuality a new *correlation*, and not necessarily a brand new theory. This however does not mean that the results are somehow inferior. It appears in fact to be a very good idea to better re-integrate individual economic (sub-) realms and, by doing so, counter the trend seen over the past years that has attempted to increasingly specialize and isolate the individual aspects of business studies.

#### 4.2 Importance and consequences for practice

Taking a specific look at high tech marketing creates a clear value for *practice*: On the one hand, companies operating in this realm are shown the nuances of their field, and receive suggestions on how to achieve a successful marketing strategy. And there's also value in how “high tech marketing” makes these kinds of companies aware of the fact that marketing isn't just about consumer goods, but is something that includes their operations as well. As mentioned, high tech companies are often “technical driven” operations. Because of this, a risk can emerge in how marketing starts to play a secondary role to the company's technical know-how. For example, Bieker (1995, 5) correctly observes how “...along with technological skill and the entrepreneurial spirit, marketing know-how is one of the key success factors in high tech marketing.”

Kadanoff (1993) sees this similarly: “High-technology companies traditionally have touted the technical advantages of products. However, because purchasing decisions for high-tech products often are based on intangible factors, many firms have realized the benefits of marketing the most technical products to the most technical audience in the most non-technical manner. As part of this approach, companies downplay the technical specifications of products and appeal to [the] audience from an emotional, rather than a rational level. One of the first companies to bring this type of marketing into [the] high-tech arena was Apple Computer Inc. (...)” (Kadanoff 1993, 10). With this being said, it shouldn't be forgotten that the issue of rationality and/or emotion can also be seen from a completely different perspective with high tech marketing and advertising. In some instances, great importance is in fact placed on a rational approach to high tech, and this has even been empirically shown to be the case (Gerhard et al. 2011, 342).

Textbooks are also playing an important role in making clear the (in some cases still underestimated) value of high tech marketing. Some of these are excellent, and very practice-oriented as they provide the latest in this field, as seen with Mohr/Sengupta/Slater 2010 as well as the (country-specific) “classics” such as Schaible/Hönig 1996 (also see e.g. Bärmann 1995). However, when considering the importance of high tech in (Western) economies, the amount of publications in this field is surprisingly low. The same is true for the (so far low) amount of attention paid to high tech marketing in (general) marketing textbooks. There is a clear upward potential for the future here.

The statement by Moriarty/Kosnik (1989, 11) is also insightful: “The good news is that certain high-tech organizations have discovered clever ways to adapt traditional marketing practices to their special situations. Paradoxically, they have discovered that focusing on marketing fundamentals is one of the best ways to provide the continuity in change so crucial to the long-term success of people and organizations.”



### 4.3 Significance for and the impact on research and teaching

#### 4.3.1 Importance for research

The importance for research is seen in the current publications on the topic (see e.g. Gerhard et al. 2011). The publication in particular by Gerhard et al. (2011) also shows how exciting it can be to view certain sub-sections of marketing issues from a perspective focusing on high tech marketing elements (in this case, market-oriented communication as a part of corporate communication, which in turn is a part of promotion comprising the marketing mix of high tech companies). The same is true when looking at sub-sections of certain industries (e.g. high tech consumer goods, see Cacciatore 2006).

High tech marketing contains a number of interesting aspects for future research. For instance, the above-mentioned deviations from classic *market research* that are required for high tech could be very exciting. Similar to the case with start-ups and SMEs, the question arises here about how market research questions can be answered without the use of large random samples and classic (quantitative) surveys (which, paradoxically, are very important in high tech). It would be interesting to see how the classic delineation between qualitative and quantitative market research could be bridged (for more on this topic, see e.g. Tapio et al. 2011; for a foundation on the combination of these methods also see e.g. Mayring 2001; Auer-Srnka 2010).

*Strategic aspects* are also interesting. Along with the literature mentioned on the marketing mix, literature is available on this factor as well (see e.g. Thudium 2004; Cacciatore 2006; Mohr/Sengupta/Slater 2010, 45pp) which at the same time contains a number of open, still-unanswered questions. Strategic thinking here appears interesting for high tech (Schaible/Hönig 1996, 13), and overlap into other industries could be very insightful. Grønhaug/Möller (2005, 95) for instance found that in high tech markets, Porter's five forces (Porter 1980) are not as applicable as they are in established markets due to the lower degree of planning security that high tech markets contain.

From a marketing perspective, it could also be interesting to determine whether and, if so, when high tech's counterpart, *low tech*, is a viable strategic option. For example, a low tech-based strategy could be used with a product applying simple principles such as a refrigerator that does not require electricity. This would refrain from expensive, complicated technology, achieving sustainability without having to be high tech. Waste would be reduced, and energy efficiency increased, creating benefits for the customer while generating competitive advantages for the manufacturer, as it is actually discussed in the Internet (see. e.g. n.n. 2012b). Interesting in this context also could be to discuss tools originally developed for high-tech markets for other, low-tech markets. One good example how useful this can be is a paper of Chesbrough/Crowther (2006) who are focusing on the adaption of "open innovation" – a typical high-tech concept to low tech markets.

It's also clear that there has so far been relatively little *empirical work* (such as the publication by Gerhard et al. 2011) on the partial aspects of high tech marketing. Here too are opportunities for further scientific (empirical) work.

In closing, the *interdisciplinarity* of high tech marketing that has already been touched upon, the overlap between different business fields, and the interlinkages with technical disciplines offer high tech marketing research an outstanding opportunity for cooperation with different realms of economic studies and other technical disciplines. When it comes to research, high tech marketing is a field with outstanding integrative potential.

#### 4.3.2 Importance for teaching

By their own estimation, the discussions on high tech marketing indicate that it needs to receive more attention in teaching than it has had so far. This is definitely the case for business and economics students who in some cases after graduation will be working in high tech companies. This is also the case for engineering students for whom high tech marketing has a direct connection to their core area of expertise and future jobs.

High tech marketing at the same time offers a significant opportunity for university education that combines technical and business aspects. A major (new) opportunity is seen in Europe with the (rela-

tively new) Bachelor-Masters system and the chance to do successive degrees in business and technology or technology and business. Moriarty/Kosnik (1989) correctly mention that a “technical degree for marketers” is a desirable educational outcome that can help successfully meet the challenges facing personnel in the high tech realm. There’s also outstanding opportunities for those pursuing integrated tracks of study as well as for those who are already active in the working world and simultaneously completing a university degree.

It needs to be closely examined whether it makes sense to offer high technology marketing as a topic of individual seminars at universities. This makes sense and would be possible in the case where there’s enough students who would like to specifically study the topic and who are truly only focused on this single aspect of the field. For all other cases – and this is the reality at most (if not all) universities – this kind of redundancy with the other subsections of marketing makes the outlook for this less than promising. A better approach might therefore be not to divide the field of marketing institutionally, but in a classic, *instrumental* fashion instead with categories such as strategy, market research, and the 4 Ps. These could then individually be expanded upon from a high tech perspective, not to mention other industry perspectives as well.

These ideas for and expansions upon the field of marketing contain exciting potential for future teaching and research. This paper has hopefully taken positive steps in exactly this direction.

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# **PITFALL OF THE INTERNATIONAL STANDARDIZATION PROCESS: THE CONSENSUS-BASED STANDARD IN THE JAPANESE MANUFACTURING INDUSTRY**

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## **ABSTRACT**

*International standards are becoming more important for conducting international businesses. An original technology of a company is adopted as the core technology for globally popularized products, it is possible to expect the income from the intellectual property of this technology, even if the products become commodities and less competitive (Ogawa 2009). In this circumstance, a business model combining international standards and intellectual property is considered to be effective for coping with the conversion of innovations to commodities. Such a business model combining international standards and intellectual property poses new challenges to many firms. One of them is the “pitfall of the consensus-based standard” mentioned in this paper. The purpose of this study is to discuss one factor: “the pitfall of the consensus-based standard.” Consensus-based standard is chosen as one of the best rational and steady means of standard settings by global companies. However, this paper clarifies that it is not always to come to competitive advantage for companies that possess excellent technologies because it is difficult to differentiate between companies. That is the “pitfall of the consensus-based standard”. Therefore the means of diffusion technology for competitive advantage should distinguish consensus-based standardization from other standardization.*

**Keywords:** Technology Management, International Strategy, Standardization, Intellectual Property Rights Management

## **1. INTRODUCTION**

International standards are becoming more important for conducting international businesses. The reasons are not limited to the existence of international rules specified in the Agreement on Technical Barriers to Trade of WTO. In the electric and electronic field, where “innovations are turning into commodities<sup>1)</sup>,” it is necessary to find how to utilize innovative technologies to earn profit, and one solution is a business model based on international standards.

As described later, in the case where an original technology of a company is adopted as the core technology for globally popularized products, it is possible to expect the income from the intellectual property of this technology, even if the products become commodities and less competitive (Ogawa 2009). It has been pointed out that a problem with the Japanese manufacturing industry is the fact that Japanese firms have innovative technologies, but they cannot find “how to develop a system for earning money<sup>2)</sup>”. In this circumstance, a business model combining international standards and intellectual property is



considered to be effective for coping with the conversion of innovations to commodities.

Such a business model combining international standards and intellectual property poses new challenges to many firms. One of them is the “pitfall of the consensus-based standard” mentioned in this paper. We can already witness this trend in the electric, electronic, or information communication field. In the present age, international standards are emphasized and some firms that have technologies cannot earn profit under international standards. The purpose of this study is to discuss one factor: “the pitfall of the consensus-based standard.”

The following section reviews the current trend of the process of international standardization, and discusses the factors in the “pitfall.” One of the major factors is the diffusion of the consensus-based standard. Section 3 discusses the reasons for the diffusion. Section 4 introduces some actual cases of the pitfall.

## **2.PROCESS OF INTERNATIONAL STANDARDIZATION THROUGH CONSORTIUMS**

The pitfall of the consensus-based standard can be said to be a phenomenon that plagues mainly Japanese manufacturers. In the background, there exists the “conversion of innovations to commodities.” Therefore, let us discuss the conversion of innovations to commodities.

### **2.1 Dilemma of integrated companies**

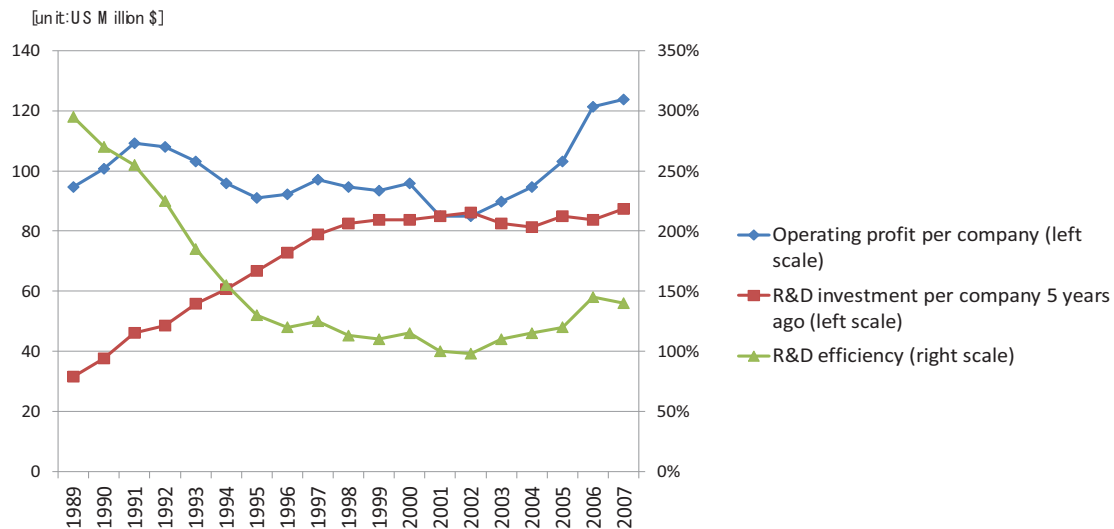
It was observed that the research and development efficiency of Japanese firms have been declining since the 1990s. Figure 1 shows the variations in the investment in research and development and operation profit 5 years later, under the assumption that the investment in research and development is recouped 5 years later. This indicates that operating profit had declined since the 1990s while the investment in research and development has increased. Namely, research and development efficiency worsened. In the 2000s, operating profit started increasing due to the IT bubble, but there is no sign of the recovery of research and development efficiency. It is obvious that the Japanese manufacturing industry changed in the 1990s.

Most fields witnessed the phenomenon in which the prices of innovative products decline soon, leading to a price war. The same phenomenon became remarkable in the semiconductor industry, which will be mentioned later. This phenomenon was observed in the fields cultivated by Japanese firms, including DVD players, liquid crystal panels, solar panels, and car navigation systems (Ogawa 2009). In the high-tech field, in which Japanese firms are competitive, a price war begins before Japanese firms recoup their investments in research and development. It is considered due to the “dilemma of integrated companies” (Sakakibara 2005).



## FIGURE 1: VARIATIONS IN R&D INVESTMENT AND PROFIT MARGIN IN THE JAPANESE MANUFACTURING FIELD

Fig.1 Variations in R&D Investment and Profit Margin in the Japanese Manufacturing Field



Source: Report on the research into science and technology of the Ministry of Internal Affairs and Communications (targeted at manufacturers among about 14,000 companies whose capital is over 10 million yen)  
 Note: Under the assumption that the R&D lead time for producing a product is 5 years, the operating profit with respect to invested research cost is called R&D efficiency. This is calculated with the following equation:  

$$\text{R\&D efficiency} = \frac{\text{Operating profit per company in the 5 years from the year concerned}}{\text{R\&D cost per company in the 5 years from 5 years ago to the year concerned}}$$

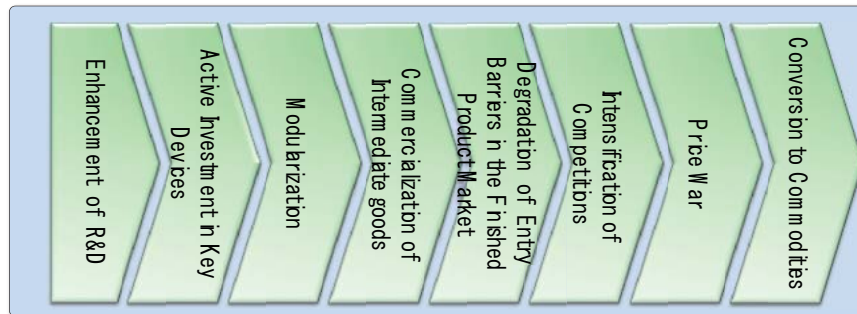
An integrated company means a company in which parts to products are integrated vertically. In general, such companies invest in development from the stage of key devices in order to differentiate their products from competitors'. However, such a behavior for securing competitive advantage leads to the increase of competitors and a fierce price war. This causes the dilemma of integrated companies.

Why does the active investment in key devices trigger a price war of products? The reason is as follows: In order to recoup investment money, it is necessary to produce and sell a large amount of products. A maker cannot produce the products all by itself, and so it has no choice but to outsource the production of key devices. The outsourcing of the production of key devices degrades the entry barrier of competitors, and then a lot of similar products are distributed in the market. What is worse, there are no significant differences in functions among the products that contain the same key devices, and so the competitors, which did not bear the cost for developing the key devices, have strong incentive to trigger a price war. Consequently, a price war breaks out (see Figure 2). In other words, the outsourcing of the production of key devices degrades the value of products.

Most of Japanese leading makers are integrated companies. Such companies have the above-mentioned structural dilemma. It is the most important for today's Japanese makers to overcome this situation (Sakakibara 2005, Nobeoka 2006, Ogawa 2009).

**FIGURE 2: DILEMMA OF INTEGRATED COMPANIES**

Fig.2 Dilemma of Integrated Companies



Source Sakakibara, 2005

## 2.2 Business Model Based on International Standards and Intellectual Property

One possible solution is a business model combining international standards and intellectual property (Ogawa 2009). This business model can be said to be a positive idea for coping with the dilemma of integrated companies. In this model, the parts business is carried out actively as a module constituting products, rather than outsourcing for recouping the cost for developing key devices. In this model, even if key devices are distributed, it is possible to earn profit from intellectual property by managing the intellectual property regarding the key devices. Namely, as key devices are distributed more broadly, this business becomes more profitable. The best method for maximizing the value of this business is to take advantage of international standards.

As mentioned at the beginning of this paper, WTO obliges member countries to use globally-standardized technologies when conducting international businesses. In this situation, Intel and Qualcomm, etc. standardized their own technologies and diffused them globally. Such companies make their own technologies international standards so that the makers of terminals have no choice but to use them and they can receive the income due to intellectual property from firms around the world. In the case of Qualcomm, the income due to intellectual property accounts for 40% of total sales, and its amount is said to be enough to pay salaries to all employees. Therefore, it can be considered that a business model combining original technologies and international standards is an effective solution to the conversion of innovations to commodities.

However, even this business model is getting difficult to adopt, mainly because of the shift from ex post standards to ex ante standards.

In the present age, it is extremely difficult for a single company to achieve international standardization, and so specialized organizations, such as consortiums, are established with the purpose of achieving international standardization, and member companies make discussions to attain their

purpose. Since standardization is conducted before the release of products, this is called an ex ante standard, which is totally different from ex post standards, such as the de facto standard, which are determined as a result of competitions. Let us discuss why ex ante standards are increasing in more detail.

### **2.3 Differences in Ex Post and Ex Ante Standards**

It is recognized that standardization is outstandingly competitive in competitive strategies, mostly from the viewpoint of ex post standards. Most of major previous studies were based on the idea that successful technologies and products become standards in target markets. Many of such studies discussed how to diffuse technologies and products in order to turn them into standards and analyzed the competitions among firms for popularizing products and technologies (Farrell & Saloner 1985, Katz & Shapiro 1985, Christensen & Utterback 1998).

Previous studies include the research focused on the relations among firms for the diffusion of their technologies or products, the research suggesting that strategic partnership should be made with even competitors in order to diffuse their technologies or products efficiently (Cusumano, Mylonadis & Rosenbloom 1992), and the research into the network externality that influences standardization significantly and the positive feedback utilizing its effects (Arthur 1994, 1996; Shilling 2002; Burg & Kenney 2003; Suarez 2005).

All of these researches were focused on ex post standards and based on the assumption that standardization occurs after competitions. As standardization provides companies with significant competitive advantage, standardization itself is meaningful in competitive strategies under ex post standards. Namely, these researches discussed “competitions for standardization.” The key device business, which has been introduced as a business model for overcoming the conversion of innovations to commodities, is also based on the concept “competitions for standardization.”

In recent years, ex ante standards are increasingly researched. Most of them are based on the assumption of “the coordination for standardization” (Warner 2005, Wegberg 2006, Shintaku and Eto 2008).

In the case of ex ante standards, a consortium makes standardization based on a consensus, and so the process of standardization does not include “competitions for standardization,” but “the coordination for standardization.” Since such coordination takes time, some researchers mentioned that the ex ante standard in a consortium is not appropriate for swift standardization (David & Shurmer 1996; Genschel 1997; Lint & Pennings 2003; Warner 2005).

If standardization progresses as a result of the competitions among companies like the case of the ex post standard, it is possible to simulate some strategies reflecting the intentions of a specific firm in the process of standardization. If standardization progresses through the coordination among firms, it takes time to coordinate the intentions of the member firms of a consortium, and the fields in which the intentions of a certain firm can be reflected are limited.

**FIGURE 3: DIFFERENCES BETWEEN EX POST AND EX ANTE STANDARDS**

Fig.3 Differences Between Ex post and Ex ante Standards

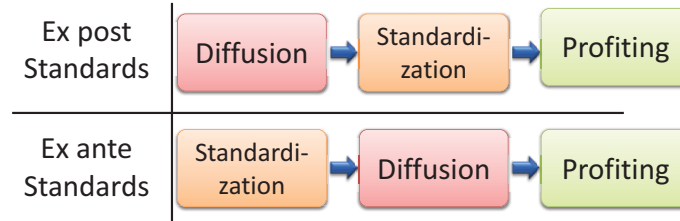


Figure 3 shows the differences between ex post and ex ante standards. In the case of ex post standards, such as the de facto standard, popularization activities are conducted as mentioned above. If there are several would-be standards, the competition among them occurs in the market, and the standard selected by many users becomes the de facto standard. Most of the above-mentioned previous studies regarding strategic partnership and network externality, etc. are focused on the popularization process. Any activities for standardization are strategic ones in the competition with other companies. Once the de facto standard is determined, the products that contain the de facto standard will be diffused further and the exclusive source of earnings will be developed. This indicates an ex post standard.

However, such competitions among would-be standards are accompanied by the effects of network externality, and so the number of users of successful standards increases considerably while that of inferior standards declines. Accordingly, the products that lost such competitions are faced with the severe result that they are kicked out from the market. This phenomenon is often seen in the competitions for ex post standards. For example, the beta standard against VHS, the digital audio tape (DAT) against CDs, and the HDDVD against blu-ray disks disappeared from the market after the competitions among would-be standards.

In order to avoid such a risk, companies come to seek standardization in advance. A consortium is established centering around a firm that has a promising technology, and standardization progresses while coordinating the intentions of each firm. This results in an ex ante standard.

Ex ante standards differ from ex post standards in that a consensus can be made in advance in a consortium. A standard that is developed based on a consensus is called a consensus-based standard. This is becoming common.

The next section discusses why the consensus-based standard is becoming common.

### 3. REASON FOR THE INCREASE OF THE CONSENSUS-BASED STANDARD

There are two factors in the increase of the consensus-based standard. One is the relation between international businesses and global standards, and the other is inter-business.

#### 3.1 Necessity of International Standardization

In general, international standards are enacted by International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC), etc. Such public standards are also called de jure standards, to distinguish them from de facto standards. As mentioned above, these standards have become extremely important for international businesses, partially due to the effects of the WTO/TBT agreement signed in 1995.

The WTO/TBT agreement obliges the member countries and regions of WTO to follow the existing international standards enacted by ISO and IEC, etc. when they require new standards for international trade<sup>3)</sup>. Namely, if international standards have been already enacted, it is impossible to introduce new standards in international businesses, and this imposes a significant restriction on competitions. It is obvious that it is more important to achieve the international standardization of original technologies as one of business strategies.

Accordingly, companies aim to achieve the international standardization approved by standardizing organizations, such as ISO and IEC, in which standardization is determined through voting, and so it is important to collect votes.

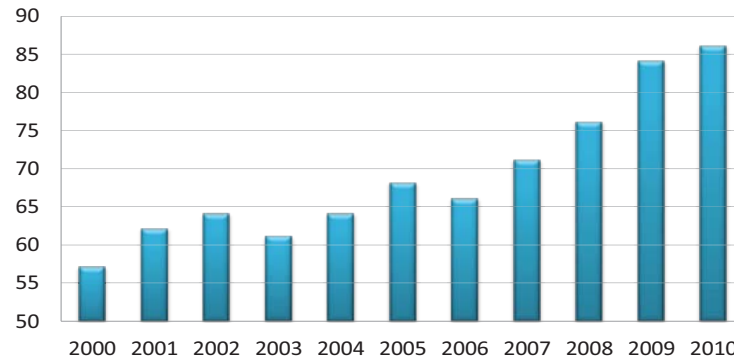
However, many standards are already selected before voting. It is now common that the standards that have been already adopted by consortium are selected in ISO and IEC as international standards. Some leading members of powerful consortiums serve as the committee members of ISO and IEC. Therefore, the standardization in a consortium is important.

Figure 4 shows the variation in the number of consortiums in the information communication field. Today, many of such consortiums aim to achieve international standardization in ISO and IEC, etc. This figure indicates that the number of consortiums have been increasing since the mid 2000s.



**FIGURE 4: VARIATION IN THE NUMBER OF CONSORTIUMS RELATED TO IT**

Fig.4 Variation in the Number of Consortiums Related to IT



Reference: "Report on the research into forum activities related to information communications (Volume 16)" produced by excluding the number of forums for purposes other than standard ones from "Variation in the number of forums for each purpose" of Telecommunication Technology Committee (2010).

### 3.2 Effects of Inter-Business

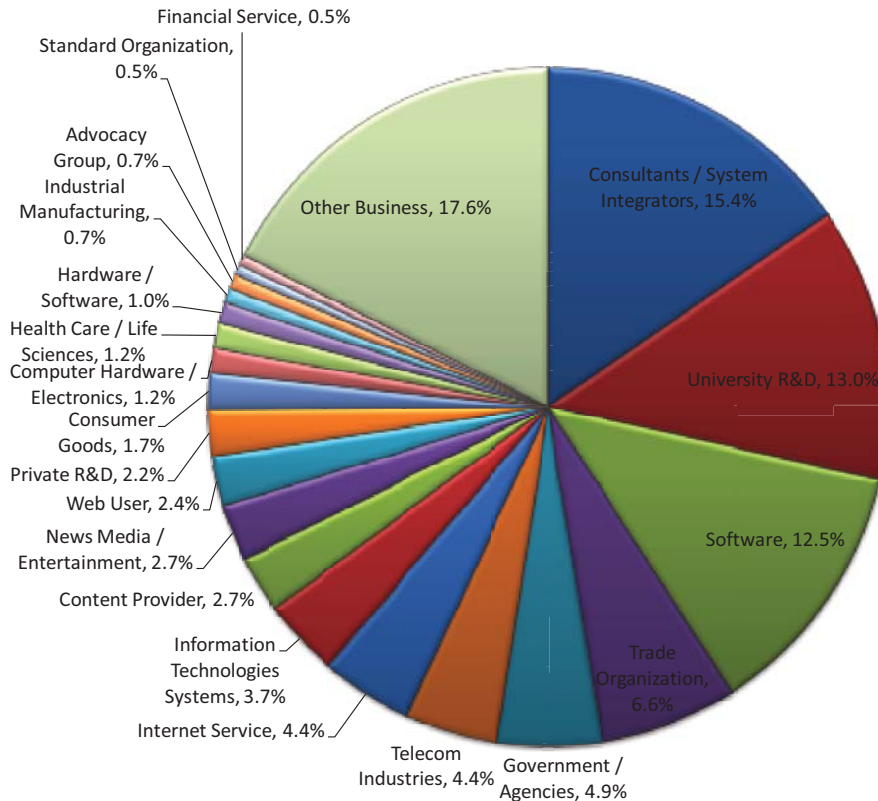
Quite a few consortiums have over 100 member companies. According to the recent report of the Telecommunication Technology Committee, the consortiums composed of over 100 companies account for over 50%, and the consortiums composed of over 500 companies account for about 10%.

Characteristically, the member companies of such large consortiums do businesses in various fields. Figure 5 categorizes the fields of the member companies of W3C. These companies came from over 20 countries. Namely, the firms in a broad range of fields from various countries attend the consortium and discuss standardization.

The reason for the development of such a consortium beyond fields and regions is inter-business. Inter-business has been promoted by the development of digital products and the expansion of the Internet accessible environment.

**FIGURE 5: BUSINESS FIELDS OF W3C MEMBERS**

**Fig.5 Business Fields of W3C Members**



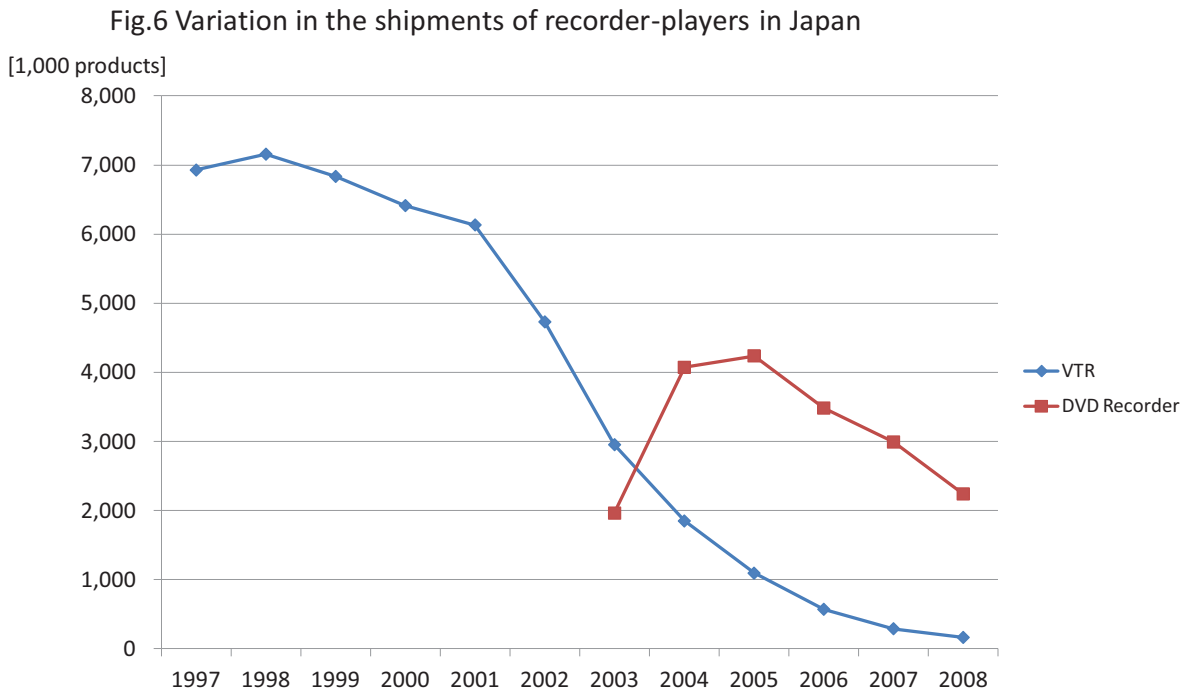
Data: Produced with reference to the reference materials available at the official website of W3C (<http://www.w3.org/>).

- Progress of Inter-Business through the diffusion of digital products

A primary factor that has changed the environment for competitions is the development of various digital products. Digitization enabled us to secure the connection and extension among different devices. For example, as mobile phones were digitized, the digital camera function has been installed from the second generation, and as TV broadcasting was digitized, it became possible to watch TV with mobile phones from the third generation. As household printers were digitized, the copy and FAX functions, etc. were added. Such integration diversifies the functions of digital devices.

Figure 6 shows the variation in the shipment volume of recorder-players in Japan. It is obvious that the demand for VTR shifted to the demand for DVD recorders, and also that the shipment volume of DVD recorders has not reached the level of VTR. On the other hand, the demand for DVD software shows a totally different trend.

**FIGURE 6: VARIATION IN THE SHIPMENTS OF RECORDER-PLAYERS IN JAPAN**



Reference: Research of JEITA

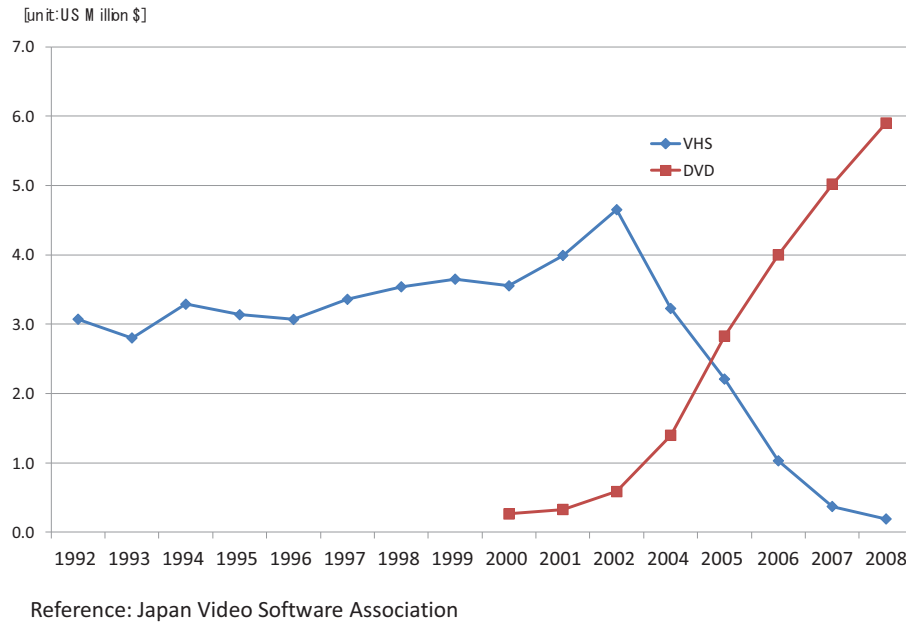
Note: As for the DVD market, “DVD players” were released in 1999, but it is omitted in this paper, to compare the “recoi DVDs.

Figure 7 shows the variation in average sales per month at video rental stores in Japan. This figure indicates that the shift from VTR to DVDs started in 2002, and DVDs replaced VTR in 2005. Likewise, Figure 8 shows the variations in the domestic sales volumes of VHS tapes and recordable DVDs, which are used for recording.

These indicate that the needs for DVDs for both playing and recording have grown steadily. Nevertheless, the market of DVD recorders has been sluggish. This is because there are many other devices that can play DVDs. DVDs can be watched with PCs or game consoles, and it is also possible to watch TV programs with PCs.

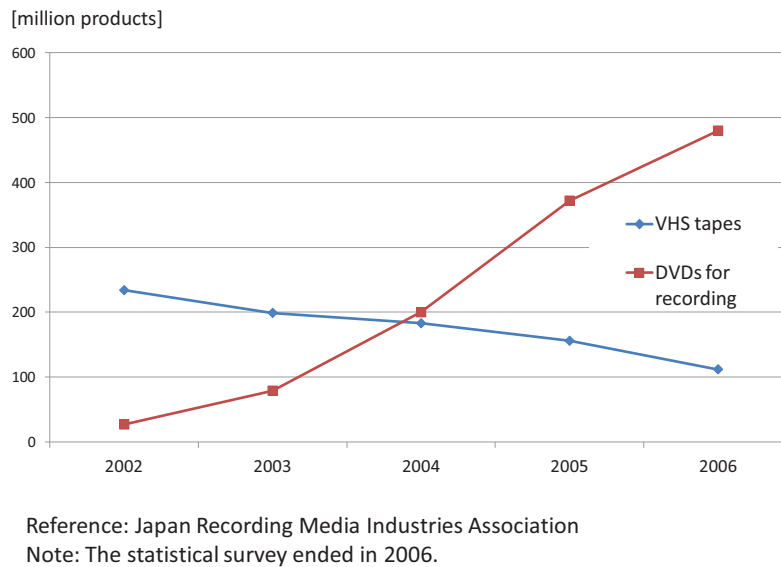
**FIGURE 7: VARIATION IN AVERAGE MONTHLY SALES AT VIDEO RENTAL SHOPS**

Fig.7 Variation in average monthly sales at video rental shops



**FIGURE 8: VARIATION IN SALES VOLUME OF RECORDING MEDIA IN JAPAN**

Fig.8 Variation in Sales Volume of Recording Media in Japan



This phenomenon occurs due to the multi-functionality of digital devices. As a broad range of devices are getting digitized, we need to operate businesses while understanding this phenomenon accurately.

For example, the DVD game console “PlayStation 2 (PS2)” released by Sony in March 2000 was first

priced at 39,800 yen. This price was high, considering the fact that its predecessor “PlayStation” was generally sold at less than 10,000 yen in 2000. However, PS2 was mounted with the function as a DVD player, while DVD players were priced at 70,000 to 100,000 yen around that time, and so the price of PS2, with which users can enjoy playing the latest games and watching DVDs, was considered affordable. It can be concluded that Sony, which took the central role in the DVD forum for standardizing DVDs, set the price in order to distribute DVDs. There was probably an expectation that PS2 would be purchased by those who had not enjoyed video games. Consequently, the sales volume of PS2 reached 980,000 in 3 days after release<sup>4)</sup>.

This case indicates that it is necessary to promote game consoles not only in the video game field but also in other fields that can be cultivated with multi-functionality.

- Progress of Inter-Business through the diffusion of Internet accessible devices

In parallel with digitization, the Internet accessible environment advances. Today, various devices can access the Internet.

In the late 1990s, the general public started using the Internet, and over the past dozen years, a wide array of products became compatible with the Internet. Technologies advanced and their practical use is in progress for accessing the Internet from not only information products, such as PCs and mobile phones, but also digital home appliances, game consoles, and automobiles. As a result, the services for consumers are developed based on the cooperation among firms beyond business fields.

Figure 9 shows the variations in the sales of music CDs in Japan and the scale of the market for music distribution through the Internet. This figure indicates that the sales of CDs started declining in 1999 while the market of music distribution is growing.

In the past, records or CDs were obtained to enjoy music, but in recent years, mobile music players and mobile phones, such as “iPod” and “iPhone,” and PCs can access the Internet, and so it is common to download music through the Internet.

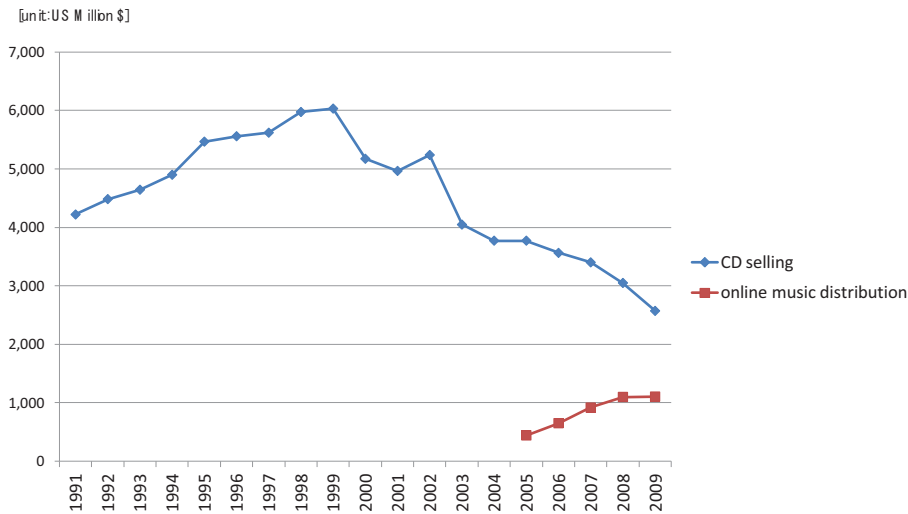
Customers used to purchase CD albums, which contain about 10 songs, but recently, users can select their favorite songs only and purchase individual songs. Therefore, conventional CD shops received significant damage, and Tower Records in the U.S. applied to the bankruptcy court in Wilmington, Delaware, for the execution of Chapter 11 of the federal bankruptcy law in August 2006.

**FIGURE 9: VARIATIONS IN THE MARKET SCALES OF CD SELLING (12-CM ALBUMS) AND ONLINE**



## MUSIC DISTRIBUTION IN JAPAN

Fig. 9 Variations in the market scales of CD Selling (12-cm albums) and Online Music Distribution in Japan



Reference: Recording Industry Association in Japan

Apple is closely related to this situation. It was 2001 when Apple released “iPod,” and it was April 2003 when it started the music distribution service “iTunes Music Store (present: iTunes Store).” In October 2003, iTunes became compatible with Windows, to expand the market. This is the reason why the sales of CDs dropped in 2003 as shown in Figure 9.

This rapidly growing music distribution business is conducted based on the cooperation among companies in various fields. This business cannot be realized in only the music field, including record companies, to which artists belong, and copyright holders, but it requires Internet providers and computer makers, such as Apple. Such cooperation is complex, but users can use this service anytime they want 24 hours a day. This service is much more convenient than conventional services. This high convenience is actualized by the cooperation beyond business fields through the Internet.

### 3.3 Avoidance of the "tragedy of the anti-commons"

Patents are one of the intellectual property rights that do not change in substance for a long period. They have always been a popular resource for companies. However, companies became more focused on patents after 1985 because of the pro-patent policy in the United States. After that, Japanese, European and U.S. companies as well as global MNCs applied aggressively for technology patents. The purpose of patents is typically to protect the owner's technologies from imitation and to license them to other companies, but patents have increased markedly in certain technology areas. Companies focusing on these technology areas find it difficult to develop technologies without infringing upon others' patent rights or encountering prohibitive development costs. This phenomenon, the tragedy of the anti-commons (Heller and Eisenberg, 1998), has been pointed out by prior studies in the case of chemical industries, but this phenomenon has also begun to occur of late in high-tech industries.

Patents are fruits of R&D, an investment from which companies expect innovation and new technologies for which the companies can apply to the USPTO for patents. Therefore, companies incur huge costs for patents, and this investment is higher for companies in the semiconductor industry than those in other industries.

#### 4. THE CASE OF THE JAPANESE SEMICONDUCTOR INDUSTRY

##### 4.1 Japanese semiconductor manufacturers and technology development

Semiconductor industry is the one of the global industries. Semiconductors are a module parts that does not work by itself. They work to be incorporated into a variety of devices, mobile phones, PC, etc. The production of semiconductor needs high technology levels, that is, knowledge-intensive industry. The companies tend to aggressively do R&D activities and invent new technologies. Table 1 is the R&D investment and sales ranking of semiconductor manufacturers in 2007. According to Table1 , R&D/Sales Ratio of Japanese companies, Toshiba, Renesas, are both 17.0% lower than 22.1 percent average of the top 10 companies. Table 2 is the world's semiconductor manufacturers sales rankings from 1986 to 2007. According to table 2, from 1986 to 1992, the Japanese company, Toshiba, NEC, and Hitachi account for six of the top 10. However, in 2000, Japanese companies reduce to three companies, and then it was reduce to two companies since2004 in top 10.

**TABLE 1: RANKING OF R&D INVESTMENT AND SALES OF SEMICONDUCTOR COMPANIES 2007**

2007	Company	Country	Structure	R&D Invest. (million dollars)	Sales (million dollars)	R&D / Sales Ratio
1	Intel	US	IDM	5,755	35,021	16.4%
2	Samsung	KR	IDM	4,263	19,951	21.4%
3	TI	US	IDM	2,155	13,309	16.2%
4	Toshiba	JP	IDM	2,020	11,850	17.0%
5	AMD	US	IDM	1,847	6,013	30.7%
6	STMicro	CH	IDM	1,802	9,966	18.1%
7	Renesas	JP	IDM	1,360	8,001	17.0%
8	Broadcom	US	Fabless	1,349	3,754	35.9%
9	NXP	EU	IDM	1,344	6,026	22.3%
10	Qualcomm	US	Fabless	1,215	5,619	21.6%
						Average 21.7%

Source: IC Guide Book 09-10 (2009), p254

**TABLE 2: THE SALES RANKINGS IN SEMICONDUCTOR INDUSTRY (1986-2007)**

	1986	1989	1992	1995	2000	2004	2007
--	------	------	------	------	------	------	------

1	NEC (JP)	NEC (JP)	Intel (US)	Intel (US)	Intel (US)	Intel (US)	Intel (US)
2	Toshiba (JP)	Toshiba (JP)	NEC (JP)	NEC (JP)	Toshiba (JP)	Samsung (KR)	Samsung (KR)
3	Hitachi (JP)	Hitachi (JP)	Toshiba (JP)	Toshiba (JP)	NEC (JP)	TI (US)	Toshiba (JP)
4	Motorola (US)	Motorola (US)	Motorola (US)	Hitachi (JP)	Samsung (KR)	Renesas (JP)	TI (US)
5	TI (US)	TI (US)	Hitachi (JP)	Motorola (US)	TI (US)	Infineon (GE)	Infineon (GE)
6	NS (US)	Fujitsu (JP)	TI (US)	Samsung (KR)	STMicro (CH)	STMicro (CH)	STMicro (CH)
7	Fujitsu (JP)	Mitsubishi (JP)	Fujitsu (JP)	TI (US)	Motorola (US)	Toshiba (JP)	Hynix (KR)
8	Phillips (NL)	Intel (US)	Mitsubishi (JP)	Fujitsu (JP)	Hitachi (JP)	NEC (JP)	Renesas (JP)
9	Matsushita (JP)	Matsushita (JP)	Phillips (NL)	Mitsubishi (JP)	Infineon (GE)	Phillips (NL)	AMD (US)
10	Mitsubishi (JP)	Phillips (NL)	Matsushita (JP)	Hyundai (KR)	Micron (US)	Freescall (US)	NXP (NL)
<b>Japanese Company</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>5</b>	<b><u>3</u></b>	<b><u>3</u></b>	<b><u>2</u></b>

TI: Texas Instrument, FCI: Fairchild, NS: National Semiconductor AMI: American Microsystems, SGS-T: SGS-Thomson(STMicroelectronics), Freescale: Fresscale Semiconductor.

Source: IC Guide Book 09-10 (2009), p.251

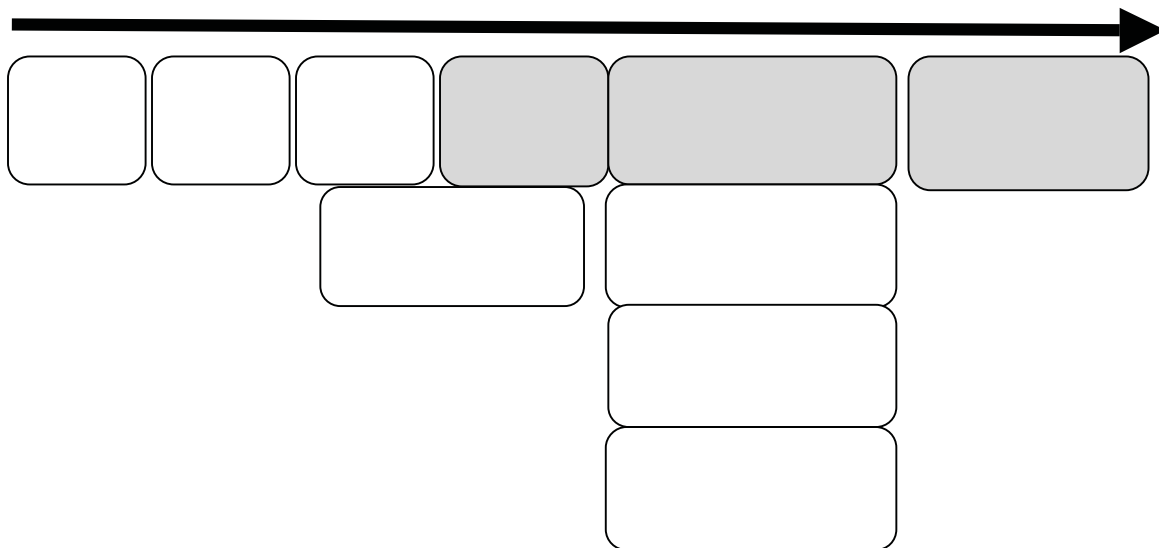
#### 4.2 DRAM Competition and consensus-based standard of Standards and Technology

Dynamic Random Access Memory (DRAM), a representative semiconductor, has a 40-year history in the industry, so it is a suitable subject for studying industry changes over a long period. It is very important for compatibility that semiconductor products such as DRAM are standardized; therefore, companies cannot develop technologies for products independent of the industry standard. Because the technology compatibility standards are so important in the industry, it is predisposed to the tragedy of the anti-commons. The late 1990s, in competition that DRAM companies try to obtain industry standard occurred because the DRAM industry sought the next generation standard to replace the SDRAM (synchronous dynamic random-access memory). Competitive environment of this time, competition

Early DRAM (1970s-1980s) between multiple standards to coexist standards at the same time had been made. Many companies decided with not only DRAM of their own promoting standards, but also DRAM of rival standard in parallel because DRAM manufacturers faced uncertain environment that whether to become the future standards. Also the industry as a whole, individual companies, rather than not have been devoted to promoting standards of any one, can also be seen such a case that is joined to promote other standards while participating in the JEDEC.

As a result, at the time, "DDR SDRAM" standard promoting JEDEC consortium won eventually as the industry standard. In fact several companies were manufacturing RDRAM standard that is promoted by Intel because Intel was holding a large share in the market CPU from around 1997. RDRAM almost occupies the industry but the chip size of RDRAM was larger than SDRAM. It is a cause of high cost. Furthermore, there was a license agreement conditions companies are paying 2.0% from 1.0% royalties for Rambus's patent held by. Exchange of Standards and Technology, the DDR SDRAM is provided free of charge was added to substantially by "(Reasonable and Non Discriminatory Licensing) RAND" by the JEDEC consortium is to it. Many DRAM manufacturers were in favor of this was.

**FIGURE 10: THE HISTORY OF DRAM STANDARDS COMPETITION**



#### 4.3 The Consortium for Standardization

The DRAM companies compete but gather in a consortium. The consortium is called JEDEC (The JEDEC Solid State Technology Association). This is the standardization facility of semiconductors in U.S with about 300 companies but joining members are not only from U.S. but also from many countries. JEDEC decides the recent DRAM standards such as SDRAM, DDR, and DDR2. These regard as not local standards but global standards in the DRAM industry.

The members must contract the patent policy of JEDEC when they join in it. The JEDEC patent policy defines RAND licensing and discloses own patents related to standards technologies early . As to compose a DRAM needs many patented technologies, companies require a standard of the DRAM industry but it means each company makes products of the same standardized DRAM. As a result, although each of the companies has many patents every year, the patented technologies do not sufficiently take advantage of differentiation from competitors. In other words, establishing a standard once in an industry, companies cannot afford to differentiate widely because if they change the standardized technology specification individually, it would deviate from the standard and become useless products. Especially, for the technology-oriented products such as DRAM, technologies are very important sources of differentiation to competitive advantage. On the contrary, it is difficult for them to add the value, for example, colors, decorations, shapes, and so on. Accordingly, consensus-based standardizations do not come to the competitive advantage for each company but it is difficult for each company to differentiate products and technologies from member companies'. Meanwhile, if there were not consensus-based standardizations, they would suffer from competing for standards and examining astronomical amount of patents in the market, namely, this would be the 'dilemma of standardizations'.

**TABLE 3: DRAM STANDARDS AND DRAM COMPANIES IN 1999**

Technology	RDRAM	PC133 SDRAM	DDR SDRAM	SLDRAM	VC SDRAM	FCRAM
<b>Facilitator</b>	Rambus, Intel	Intel, many DRAM companies	<u>JEDEC</u>	SLDRAM Consortium	NEC, Siemens, Hyundai	Fujitsu, Toshiba
<b>Royalty</b>	1.0%-2.0%	N/A	<u>RAND</u>	Free for Only Members	N/A	N/A
<b>Fujitsu</b>	△	√	√	X	X	X
<b>Hitachi</b>	√	√	√	X	△	X
<b>Mitsubishi</b>	√	√	√	△	X	X
<b>NEC</b>	√	√	√	X	√	√
<b>Toshiba</b>	√	√	√	△	X	√

Source: "Nikkei Electronics", (1999), p43 and Yokota (2005) pp.225-240.

Figure 11 shows the number of patents of "SDRAM" technology in terms of each Japanese company. In 1994, but is the art has not been acquired mostly in both companies, that slide into increased rapidly from around 1997 is evident.

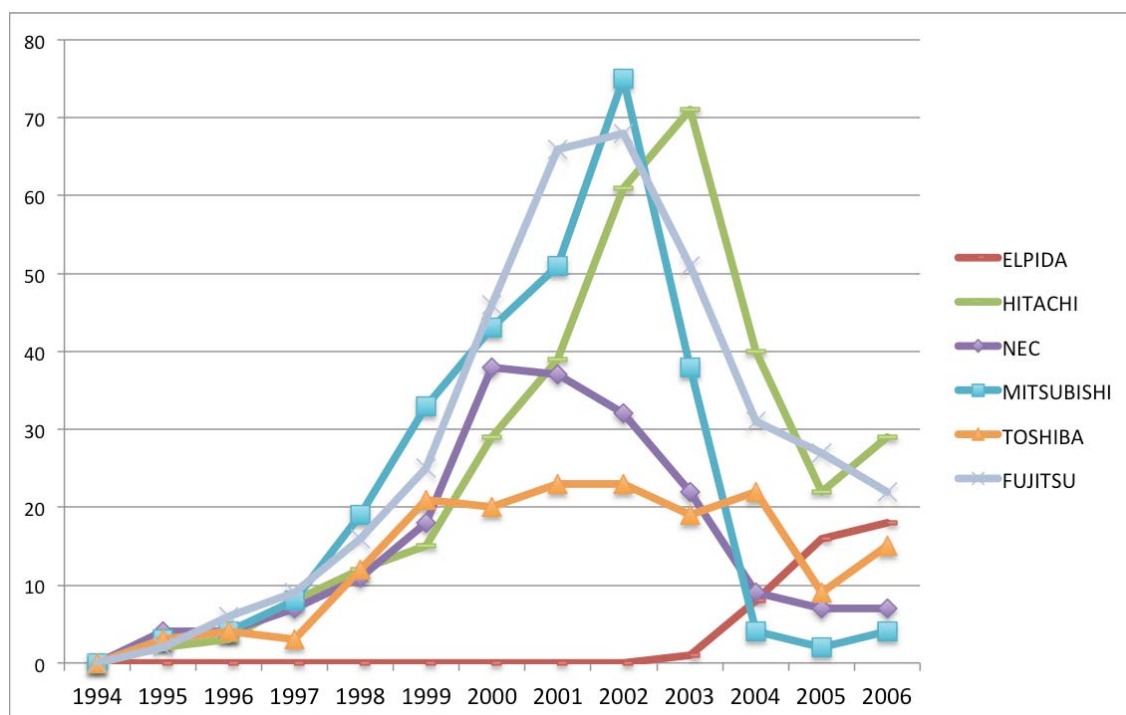
In 1994, companies were not patented the most DDR SDRAM. However, the slide into increased rapidly



since 1997. In 2002, but has obtained a patent from 40 to 70 companies, and then rapidly slide into decline. Technology competition will be intense as soon as the technology will be developed.

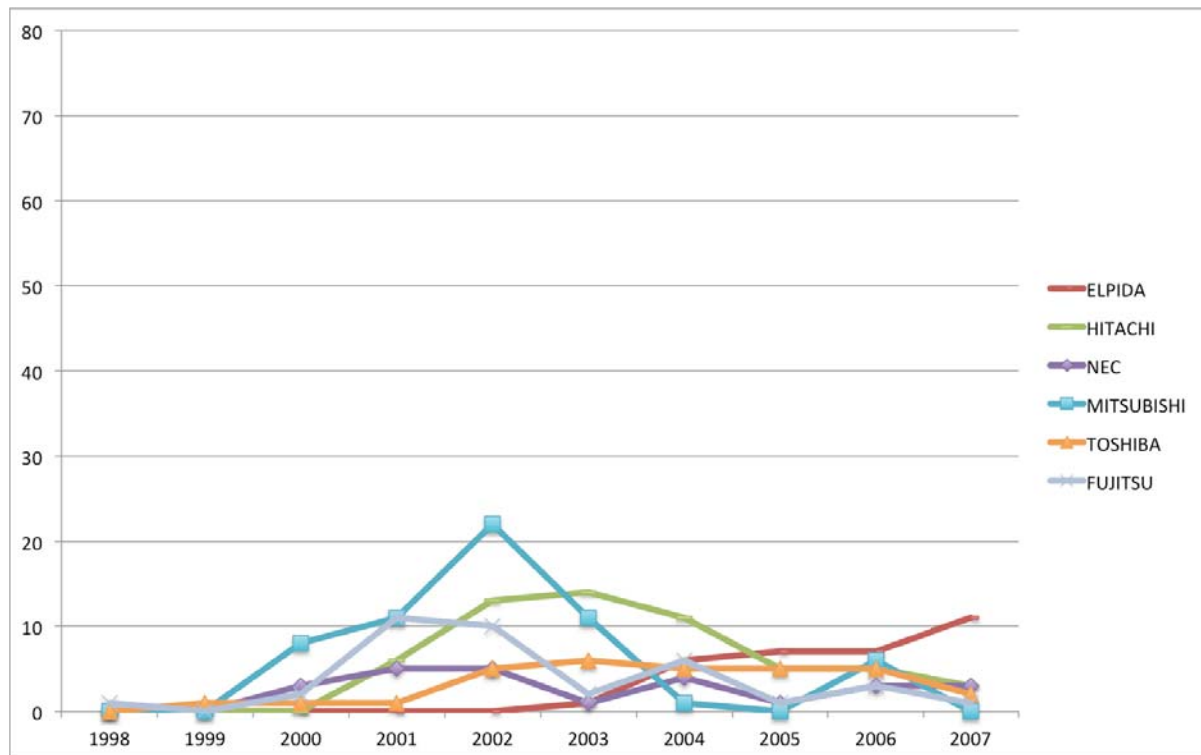
On the other hand, Figure 12 shows the number of patents of "DDR SDRAM" technology in terms of each Japanese company. DDR SDRAM is consensus-based standard that defined by the JEDEC consortium as the next-generation technology of SDRAM from around 2000. The number of patents of each company, but begins to increase in the number of 5-20 is about roughly even during peak hours. Compared with 40 to 70 of the SDRAM, the number of patents have been greatly reduced across the board as a whole. Therefore, it is considered in a certain consensus of Standards and Technology Consortium, can not be differentiated, because technology is less room for competition, companies are actively and do not get the patent rights.

**FIGURE 11: THE NUMBER OF PATENTS OF "SDRAM" TECHNOLOGY**



Source: USPTO Database.

**FIGURE 12: THE NUMBER OF PATENTS OF "DDR SDRAM" TECHNOLOGY**



Source: USPTO Database.

## 5. CONCLUSIONS AND DISCUSSION

This Paper discusses the business models combining international standards and intellectual property poses new challenges to many firms. One of them is the “pitfall of the consensus-based standard” mentioned in this paper. We can already witness this trend in the electric, electronic, or information communication field. In the present age, international standards are emphasized and some firms that have technologies cannot earn profit under international standards.

Companies that have superior technologies diffuse own technology in order to become them to international standard. Consensus-based standard is chosen as one of the best rational and steady means of standard settings by global companies. However, this paper clarifies that it is not always to come to competitive advantage for companies that possess excellent technologies because it is difficult to differentiate between companies. That is the “pitfall of the consensus-based standard”. Therefore the means of diffusion technology for competitive advantage should distinguish consensus-based standardization from other standardization.

In high-tech industries, technologies are decentralized because many companies obtain exclusive patent rights every year. Notably, in the semiconductor industry, companies acquire a large number of patents at the almost same time. The industry standards need to be set early in order to bring acceptable products to market. One reason for this situation is that, because they are in the tragedy of the anti-commons, it is difficult for them to examine each other's patents related to a certain standard technology carefully, causing an increase in patent violations and patent litigations in recent years.

Therefore, they choose consensus-based standardization through industry standardization consortia as a means for determining cooperative standards early and managing members' patents rights efficiently and rationally to facilitate competition. However, some companies go into the "pitfall of the consensus-based standard".

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# IN SEARCH OF IDENTITY - CONTINGENCIES AND INSTITUTIONAL PRESSURES ON MANAGEMENT ACCOUNTING IN BRAZIL AND GERMANY

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## ABSTRACT

*We analyze management accounting and control systems in Brazil and Germany. Drawing from contingency theory, we identify relevant influence factors and specify them by country-specific historical data. Using a qualitative cross-sectional field study approach with a matched sample, we gathered data through on-site interviews with local management accountants. Our results show that the similarities substantially outnumber the differences of management accounting and control practices in the two countries even though the local business environments differ essentially in the respective contingency variables. In this respect, global convergence trends seem to overlay country-specific adaptations to particular market conditions.*

**Keywords:** Management Accounting, Brazil, Germany, Contingency Theory, Global Convergence, Information Systems, Cross Country Field Study

## 1. INTRODUCTION

The present paper provides first comparative empirical evidence on management accounting and control practices in Brazil and Germany. These countries represent interesting examples for comparative research for three reasons. First, because of their increasing economic importance, transition economies become interesting objects of study for management accounting research. Among these countries, the BRIC states (Brazil, Russia, India, China) are the largest and economically most important ones. Whereas management accounting and control systems in India and China have been studied before (Anderson and Lanen, 1999; Joshi, 2001; Lin and Yu, 2002), empirical evidence on management accounting practices in Brazil is scarce. Therefore, the present paper contributes to the existing body of knowledge on management accounting in transitional economies.

Second, our paper explores management accounting and control practices in Germany. Management accounting (MA) in Germany emerged in the 1970s. German MA concepts and models developed somewhat independent of the influences of other countries and were based on the more quantitative-technical approach to business administration (Küpper and Mattessich, 2005; Messner et al., 2008; Wagenhofer, 2006). In recent years, an increasing international interest in German MA and its techniques can be observed. In addition to a number of review articles which have been published in international journals (e.g., Kloock and Schiller, 1997; Schildbach, 1997; Weber and Weißenberger, 1997) several studies on the subject have been conducted by researchers from Anglo-Saxon countries (e.g., Ahrens, 1997; Ahrens and Chapman, 2000; Sharman and Vikas, 2004; Jones and Luther, 2005; MacArthur, 2006; Krumwiede and Suessmair, 2007). However, empirical evidence on German MA is still limited (Becker and Messner, 2005; Wagenhofer, 2006; Schäffer and Binder, 2008). Thus, our paper provides additional insights into German MA and control practices.

Third, our comparison of Brazilian and German MA systems is valuable because Brazil has emerged as a global player of international relevance during the last two decades and has strong economic ties with Germany. More than 1,200 German companies have subsidiaries in Brazil (Kaufmann et al., 2006, 13). Since multi-national corporations have to decide whether their domestic MA and control system is transferable to foreign subsidiaries (Chenhall, 2003), comparative studies on the determinants and designs of country-specific practices are necessary and beneficial (Shields, 1998).

We add to the scarce empirical data on MA in Brazil and Germany, especially at the comparative level, using contingency theory as a basic theoretical framework. Our analysis presents evidence from a cross-sectional field study and serves as a starting point for further systematic theory testing and hypothesis

formulation. To ensure comparability, we set up a matched sample of ten German and ten Brazilian corporations.

The present paper proceeds as follows: Section two provides a review of the comparative MA literature with a special focus on transition economies. Section three identifies relevant contingency variables and describes their characteristics for the two countries. Following a description of the field work and the methodology for data analysis in section four, we present the empirical results in section five. Finally, we discuss the results and their implications.

## **2. LITERATURE REVIEW ON COMPARATIVE MANAGEMENT ACCOUNTING**

As empirical evidence on MA in Brazil is limited to single case studies, such as those provided by Lopes de Sá (1996) and Frezatti (2007), a more comprehensive understanding of MA and control systems in Brazilian corporations is yet to be developed. However, studies on comparative management accounting (CMA) from other transition economies and emerging markets exist. To evaluate adequately the stage of development of MA in Brazil, we present a review of the related literature. MA in South Africa has been researched by Luther and Longden (2001) and Waweru et al. (2004). Luther and Longden (2001) compare South African and British companies in a large-scale survey and analyze 47 MA practices, such as budgets, performance measurement and cost accounting. Their results show that scenario analyses for budgets and currency exchange rates, cost of capital calculations and activity based costing (ABC) are more important in South Africa than in the UK. Companies derive more benefits from implementing MA in South Africa because of the local macroeconomic conditions consisting of high interest rates, volatile exchange rates, inflation and volatile capital markets. Waweru et al. (2004) show that MA in South Africa is currently in a transition phase and that it is rapidly developing toward modern structures and processes. Therefore, sophisticated instruments such as the balanced scorecard and ABC represent the standard in South African retail companies. However, such an adaptation to tougher international competition was not observed by Collins et al. (1997) for several Central American transition economies where even standard budgeting processes are only used by companies with innovative market strategies.

Among the transition economies, the BRIC states receive special attention because of their size, economic strength and their number of national and international corporations. However, studies on MA in the BRIC countries are scarce, existing mainly for India and China (Anderson and Lanen, 1999; Joshi, 2001; Lin and Yu, 2002). Anderson and Lanen (1999) report that Indian companies tend to recruit increasingly professional managers with good planning skills. At the same time, accounting is developing from mere registering and data processing into a management function with a focus on decision support. In line with other transition countries, market liberalization, increasing competition and international corporations promote a diffusion of MA. Nevertheless, Indian managers rely mainly on traditional instruments, such as variable costing and budgeting. According to the comparative study between India and Australia by Joshi (2001), sophisticated MA practices such as ABC or zero-based budgeting have not yet been implemented in Indian corporations. These observations are attributed to cultural differences and a more conservative attitude of Indian management. Instead, Indian companies apply instruments with a focus on cost control. In China, joint ventures between Chinese and foreign companies have acted as drivers of MA diffusion (Firth, 1996). This comprises capital and resource budgeting as well as investment appraisals (discounted cash flow, calculation of capital costs, sensitivity analyses, etc.), which are simply adopted by the Chinese partner after the joint venture is established. However, these are not adapted to the companies' environments and specific situations, so their effectiveness remains questionable. Lin and Yu (2002) show in a Chinese case study that the implementation of a western style cost accounting system including modern techniques such as standard costing or target costing can be significantly accelerated by a strong top-down management approach. In this context, incentive mechanisms must be established to create sensitivity for cost efficiency among the employees.

The international literature on MA provides some empirical evidence for Germany. German MA differs from its Anglo-American counterpart in the historical focus on production theory, the strict analytical approach and its layout as a two-ledger system that separates cost and financial accounting information. German MA ("Controlling") has traditionally been self-referential (Schäffer and Binder, 2008) and has



struggled to establish itself as a distinct discipline (Becker and Messner, 2005; Wagenhofer, 2006; Messner et al., 2008).

Most empirical research on Germany is less concerned with MA tasks and practices but studies management accountants (e.g., Ahrens, 1997; Ahrens and Chapman, 2000). Rather than taking an active role to interfere in business transactions, German management accountants mainly show the financial consequences of decisions and are strongly influenced by abstract theoretical approaches and models (Ahrens, 1997). Whereas for management accountants in other countries (e.g., in the UK), gaining hands-on work experience in corporate practice is essential, German management accountants are strongly influenced by university education. Companies tend to value a sound academic background and prefer to recruit candidates with Master's or even PhD degrees (Ahrens and Chapman, 1999). Despite these studies, the empirical body of knowledge regarding German MA practices remains limited (Messner et al., 2008), in particular in non German-speaking journals. The German research tradition in business administration has generally used a normative approach and focused on conceptual frameworks. Only in recent years have business researchers adopted a more empirical perspective.

The scarce knowledge on Brazilian and German MA practices, Brazil's role as an emerging global player, the intensive business ties between these two countries and the increasing international interest in German MA call for an integrated comparative study. Therefore, the present paper provides first empirical evidence of MA in Brazilian and German companies.

### **3. IDENTIFICATION AND INFLUENCE OF CONTINGENCY VARIABLES**

We use contingency theory as an analytical framework to study exogenous influences that affect the design of MA systems in Brazil and Germany. Contingency theory states that there is no universally applicable accounting system. This basic assumption stipulates that companies adapt their structures and processes to given characteristics of their environments (Otley, 1980; Waterhouse and Tiessen, 1978; Luft and Shields, 2003). The literature has identified environmental uncertainty, culture, technology and organizational form and size as generic contingency variables that influence accounting (Chenhall, 2003; Waterhouse and Tiessen, 1978; Otley, 1980; Ginzberg, 1980; Fisher, 1995; Fisher, 1998). In the present paper, we control the variables for organizational form and size by building an adequate matched sample of companies from the same industry sectors. Furthermore, we only included corporations with several thousand employees that are comparable in size, that possess a capital market orientation and that are mainly listed at major stock exchanges. We operationalize environmental uncertainty as volatility of inflation, currency exchange rates and interest rates (Luther and Longden, 2001; see Figures 1 and 2, Table 1). To analyze national culture, we draw on the categories of Hofstede (1983a, 1983b; see Table 2): power distance, individualism and collectivism, uncertainty avoidance and masculinity. As the relevance of information systems and software is continuously increasing for contingency studies (Chenhall, 2003), we specify technology as the characteristics of software and systems and their influence on MA.

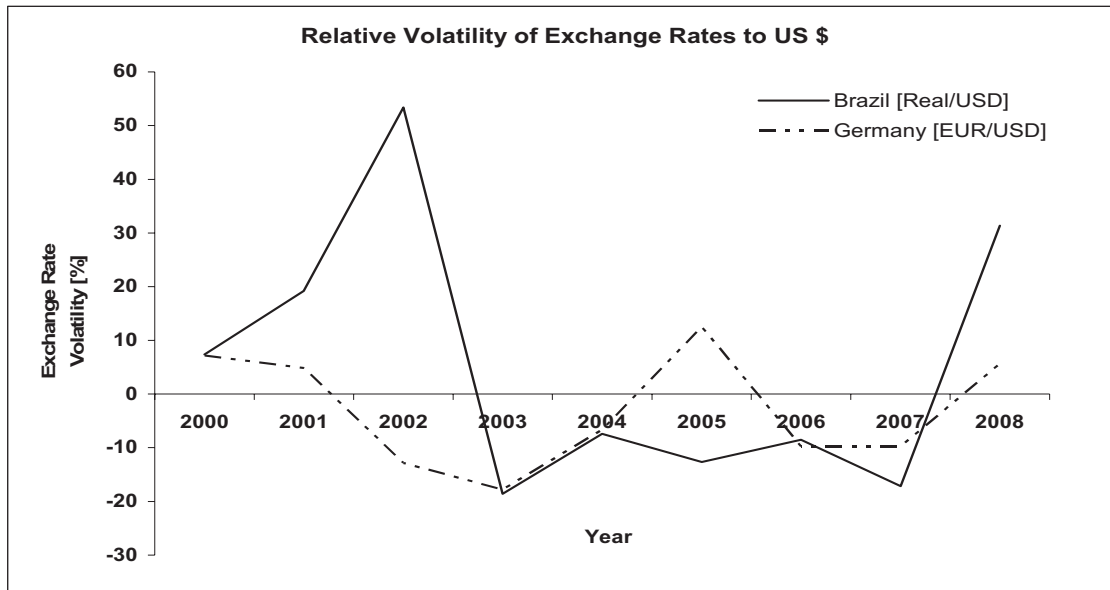


Figure 1: RELATIVE CHANGES IN EXCHANGE RATES OF THE BRAZILIAN REAL AND THE EURO TO THE USD (SOURCE: FEDERAL RESERVE SYSTEM)

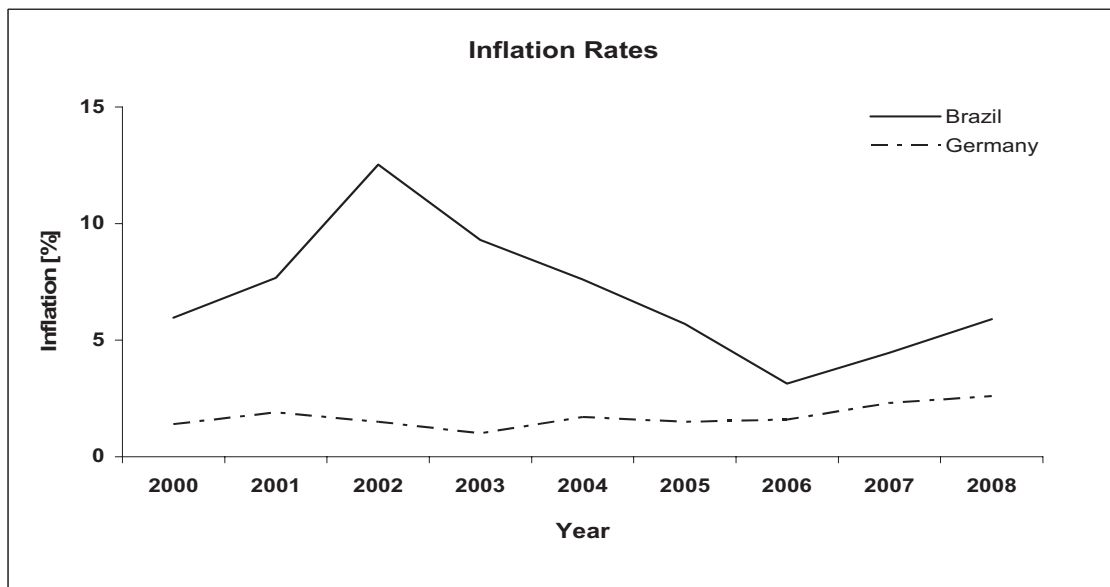


Figure 2: INFLATION RATES IN BRAZIL AND GERMANY (SOURCE: GERMAN FEDERAL STATISTICAL OFFICE AND BANCO CENTRAL DO BRASIL)

<b>Year</b>	<b>SELIC Interest Rate Brazil</b>	<b>Base Interest Rate Germany</b>
<b>2002</b>	19%	2,57%
<b>2003</b>	25,5%	1,97%
<b>2004</b>	16,5%	1,14%
<b>2005</b>	17,75%	1,21%
<b>2006</b>	18%	1,37%
<b>2007</b>	13,25%	2,7%
<b>2008</b>	11,25%	3,32%

Table 1: BASE INTEREST RATES P.A. IN BRAZIL AND GERMANY (REFERENCE: JANUARY OF THE CORRESPONDING YEARS; SOURCE: GERMAN CENTRAL BANK AND BANCO CENTRAL DO BRASIL)

<b>Dimension / Country</b>	<i>Power Distance</i>	<i>Individualism</i>	<i>Masculinity</i>	<i>Uncertainty Avoidance</i>
<b>Brazil</b>	69	38	49	76
<b>Germany</b>	35	67	66	65

Table 2: INDEX VALUES FOR BRAZIL AND GERMANY IN HOFSTEDE'S CULTURE DIMENSIONS (Hofstede, 1983,a)

The impact of these contingency variables on MA has been analyzed in a number of different studies that have produced heterogeneous results. The literature suggests that higher levels of uncertainty avoidance lead to the usage of more detailed accounting information (Hartmann, 2005; Chong and Chong, 1997). However, empirical studies provide mixed evidence (Hartmann, 2000). While Chapman (1997) and Govindarajan (1984) argue that high environmental uncertainty makes accounting information less reliable for decision making, Ezzamel (1990), Luther and Longden (2001) and Abdel-Kader and Luther (2008) find that companies intensively use accounting information for management issues under these conditions. In this context, Chenhall and Morris (1986), Gordon and Narayanan (1984), Gul and Chia (1994), Chong and Chong (1997) and Agbejule (2005) provide evidence that managers do not only use a broad spectrum of accounting information if they face high environmental uncertainty, but they also base their decisions increasingly on nonfinancial information.

The cultural dimensions of Hofstede have been widely criticized (Hartmann, 2000; Chenhall, 2003; Harrison and McKinnon, 1999; Baskerville, 2003; Chow et al., 1999) but still represent the standard in empirical research on CMA and on contingency theory (Van der Stede, 2003; Joshi, 2001; Merchant et al., 1995; Chow et al., 1996; Chow et al., 1999; Harrison, 1993). While findings generated by studies on the impact of culture on MA practices are ambivalent (Chenhall, 2003; Haka and Heitger, 2004), Chow et al. (1999) reveal an influence of Taiwanese national culture on the management controls that are implemented in Taiwanese operations of US and Japanese corporations. Harrison (1993) identifies significant interactions between culture and the reliance on accounting performance measures. In contrast, Merchant et al. (1995) find only weak evidence for the influence of Hofstede's culture dimensions on productivity and performance of Taiwanese managers. In addition, the findings by Van der Stede (2003) suggest a minor impact of national culture on management control systems in multinational corporations.

Although a tight link between accounting and information technology is anticipated (Granlund and Mouritsen, 2003; Chapman, 2005), this relationship is currently considered to be understudied (Berry et al., 2008). Some empirical findings suggest that the implementation of enterprise planning systems has little impact on MA and control techniques. Nevertheless these systems shift the tasks of management accountants (Granlund and Malmi, 2002; Caglio, 2003; Scapens and Jazayeri, 2003; Dechow and Mouritsen, 2005).

A closer examination of the relevant contingency variables shows that their values differ significantly for Brazil and Germany (see Figures 1 and 2, Tables 1 and 2). Brazil possesses a substantially higher environmental uncertainty than Germany regarding inflation and currency exchange rates. In addition, the high interest rates make it more difficult for companies to coordinate their financing strategies. From a cultural perspective, Brazil is a high power distance/low individualism country while Germany scores low on power distance and high on individualism in the Hofstede dimensions. While only few studies examine applications of information technology in the two countries, modern standard software is obviously widely used (Samtleben and Hess, 2006; Saccol et al., 2004; Mendonça et al., 2009). Given these different environments, the question arises if findings of previous contingency-based research are reflected by differences between MA and control systems in Brazilian and German corporations.

#### **4. METHODOLOGY**

The present paper uses a cross-sectional field study approach (Lillis and Mundy, 2005). Consistent with other field studies (Ahrens and Chapman, 2004; Atkinson and Shaffir, 1998; Roslender and Fincham, 2004) and relevant research on MA in transition countries (Anderson and Lanen 1999; Lin and Yu, 2002; Waweru et al., 2004), we collected our data through twenty semi-structured personal interviews. These interviews were conducted with management accountants in ten Brazilian and ten German corporations. The companies were matched according to industry sector and size to control these intervening variables.

Our interview guide reflects the findings of previous research outlined in section three. After gathering our interviewees' personal data, such as their education and years of work experience, we recorded the main responsibilities of MA in the respective companies. This question seemed particularly reasonable against the background of the ongoing discussions about the essence of MA led by German MA researchers (Becker and Messner, 2005; Messner et al., 2008; Schäffer and Binder, 2008). The following questions were dedicated to budgeting procedures, as these procedures may be influenced by the cultural dimensions of power distance and individualism (Chow et al., 1999; Harrison and McKinnon, 1999). As previous research suggests that environmental uncertainty may have an impact on the scope of MA information used by managers, we proceeded with queries about the comprehension of management reports and characteristics of information reported (Chong and Chong, 1997; Agbejule, 2005). Eventually, we addressed the level of information technology application as a potential influencing factor of MA practices (Granlund and Mouritsen, 2003; Chapman, 2005) and asked our interviewees about particular challenges with respect to MA.

To gain complete and reliable data, the interviews were tape-recorded and transcribed verbatim (Silverman, 1993; Abernethy et al., 2001). This process yielded approximately 450 pages of transcripts and field notes. As Latin American companies often show significant levels of mistrust and suspicion toward empirical research, particularly with sensitive topics such as managerial accounting and control (Collins et al., 1997), a field study approach with personal interviews seemed the most appropriate method for data collection. In addition, this methodology allowed us to ask exploratory, open-ended questions according to our research approach. We used a content analysis to reduce the data contained in the transcripts and to extract relevant information that was then classified into categories (Harwood and Garry, 2003; Krippendorff, 2004; Jauch et al., 1980; Scandura and Williams, 2000).

We improved the validity of our findings with internal reports and documents that we used for data triangulation (Yin, 2003; Silverman, 1993). Large manufacturing companies were identified in cooperation with one of the leading Brazilian business schools based in São Paulo. We conducted the interviews on-site with management accountants from the following sectors: textiles, energy, automotive, pulp and paper, steel, aviation, mining/minerals, chemicals, electronics and food. The majority of the companies are listed

on the major international stock exchanges, have an average of 20.000 employees and are controlled by a majority of Brazilian or German capital. The interviewees had an average work experience of twelve years in MA or finance.

## **5. RESULTS**

### **5.1 Tasks of Management Accounting**

In both countries, we observed the existence of precise ideas about the tasks of modern MA. Accordingly, all interviewees could provide a definition of MA and its activities. Most of them described MA as a service function for management that - as Interviewee B7 puts it - *"helps the company to focus on what is really important"*. For this reason, MA serves the purposes of providing information and decision support. Financial accounting information is consolidated and transformed into management information, which is interpreted and commented on by management accountants. However, although financial accounting and MA obtain base data from the same source, the two functions are institutionally separated in companies from both countries.

Whereas information processing and analysis constitute core tasks of MA, our results suggest that different priorities have been established. We noticed that the German management accountants referred more frequently to planning, forecasting future business developments and anticipating effects on income to enable the introduction of early countermeasures. In contrast, our Brazilian interviewees stressed the importance of retrospective performance analyses. Overall, MA in the German corporations tends to be more future-oriented than their Brazilian counterparts.

In addition, tax legislation turned out to be a relevant influence factor on the local MA procedures in Brazil. In this context, MA has two main tasks: Clearing noise in relevant information that is caused by tax rules and elaborating strategies for tax load reduction.

It became evident that all companies interviewed had precisely defined MA processes that consist of reporting, budgeting, performance measurement, key ratio calculations, incentive mechanisms and so forth. Furthermore, calculations with contribution margins, return on investment, profitability calculations and scenario analyses were frequently used. We were surprised to see that also advanced instruments such as the balanced scorecard or benchmarking and monitoring of competitors were well known and widely used in both the Brazilian and German firms. Companies apply these instruments and methods mainly to quantify business processes and inform management about deviations from planned figures. In several corporations, these were even subject to regular cost-benefit analyses between the corresponding process owners and management.

While in Germany MA has had an important role in corporate practice since the 1970s, it has become increasingly important in Brazil only during the last decade. This importance is due to the international expansion of the Brazilian industry and the establishment of professionalized management with a sound academic knowledge of business administration. These tendencies were confirmed by most of the Brazilian interview partners. Interviewee B2 referenced that corporate growth and the corresponding formation of several business required more detailed information provided by management accountants rather than relying on financial accounting data only. The increasing importance of accountability was also stressed by a Brazilian interviewee who explained that his company used to be a family business that had established a management consisting of professionals a few years ago. The latter forced the implementation of MA systems that provide more sophisticated performance measures while excluding effects on earnings for which the management is not responsible. The increasing professionalism in the local management and accounting areas is also reflected by the Brazilian interviewees' level of training. While all of them hold a bachelor's degree, five of them have completed an MBA program, which usually included exchanges with US or European universities. With respect to the German corporations, it is remarkable that five interviewees hold Ph.D. degrees.

### **5.2 Budgeting Procedures**

With the exception of two Brazilian corporations, management accountants are responsible for budgeting procedures. Therefore, they develop budgeting manuals, establish schedules for the functional departments, consolidate the budgets delivered by the respective departments and assist managers throughout

the process. Considering the different values for power distance suggested by Hofstede, the budgeting approaches carried out in Brazilian and German corporations may differ. In Brazil, a country with high power distance, corporations may tend to follow a top-down approach; however, in Germany, a country with lower power distance, the bottom-up approach might be more common.

Our findings, however, do not support these expectations. The majority consisting of six Brazilian and seven German enterprises set up budgets under participation of executives on various hierarchical levels. Based on target values given by management, budgets are developed cooperatively within multiple feed-back loops and eventually validated by executive directors, a procedure that was labeled as *“a kind of a yo-yo process”* by one Brazilian interviewee.

Each of the three Brazilian and German corporations which constructed budgets top-down did not have feedback mechanisms, and there was no involvement of functional business units in the planning of potential scenarios. Whereas the interviewees in these companies acknowledged that the participation in the budgeting process, associated with a participative budgeting approach, may increase the employees' motivation, they stress higher efficiency through the application of the top-down design. The strict bottom-up aggregation was used by only one Brazilian corporation in our sample. In this case, the entire planning was carried out in the functional business units and eventually approved by top management. By applying this approach, the corporation intends to use the information of *“employees who are in touch with the daily business”* (Interviewee B4).

### 5.3 Nature of Management Accounting Information

As outlined in section three, studies focusing on the impact of environmental uncertainty on MA suggest that the spectrum of accounting information used is influenced by the level of perceived environmental uncertainty. For this reason, we examined the nature of MA information reported to management.

In this context, performance reporting represents a key task of the MA function. Financial figures are the core of MA information in all companies studied. Management accountants resort to various instruments to comply with the information needs of managers.

While all corporations use sophisticated key ratio systems with financial accounting information, Brazilian companies more frequently (90%) integrate nonfinancial accounting information into their systems than their German counterparts (40%). Among this form of information, technical data such as volumes, efficiency ratios or quality levels, as well as information concerning markets, customers and competitors are of significant importance in most companies. In this context, Interviewee G3 stated that *“Costs are a function of our operative business. One has to integrate nonfinancial ratios in order to be able to evaluate financial results. Therefore, we combine nonfinancial as well as financial ratios in our reports.”*

This statement prefigures differences in the handling of nonfinancial information, which became obvious during our interviews. In German corporations, the relation of nonfinancial information to the business processes and to financial figures is subject to conceptual discussions. In contrast, nonfinancial information is often used more pragmatically in Brazil. Sophisticated instruments such as the balanced scorecard, benchmarking and analyses of customer data are often quickly adapted. However, the corresponding information is analyzed in parallel to financial data and is therefore not integrated into the existing information systems. Hence, complex and heterogeneous information systems exist more often in Brazil than in Germany.

Another difference concerns the level of detail in which information is reported. In Germany, performance reports include often less detailed information and take the form of executive summaries. This observation applies to six out of ten German corporations studied. Management accountants provide only aggregated data to avoid an information overload of managers though more detailed data are available in cases of specific queries or decision problems. In contrast, the Brazilian companies tend to report in a very detailed format which leads to lengthy book-like documents. The Brazilian interviewees mention various reasons for this plethora of information. In one case, reporting contents are set up by various departments. As management accountants are not responsible for the overall reporting process, they are neither able to filter and analyze relevant information nor to develop recommendations for action or point out problems. Instead, the Chief Financial Officer receives a considerable amount of information and decides which data should be subject to a more thorough analysis. However, in most corporations, the manage-



ment's information needs are the main driver for more comprehensive reports according to our observations in the Brazilian corporations. For example, Interviewee B2 mentioned that attempts to introduce a less comprehensive report format had repeatedly failed in the past. *"We have been experiencing difficulties in reducing the level of detail of the reports. Because every time you try to reduce the level of detail, someone is missing something that he would like to see in the report and people start to complain"*. Similarly, other interviewees explained that managers occasionally demand additional information which, in some cases, even exceeds the capacities of the information systems applied. In contrast, reports in the German companies are moving in the opposite direction. Several German interviewees claimed that they used to provide detailed reports whose reviews took a considerable amount of the management's time in the past. However, on the demand of management, the scope of the reports was reduced over the last few years, resulting in a more focused reporting. Hence, management accountants preselect those developments that are presented in greater detail in management reports and, therefore, shape the management's agenda. Minor problems tend to be solved more often by management accountants themselves *"Currently, we are providing high-level-reports containing selected ratios and a qualitative commentation. It is of use for the management. If there are problems below this level, I will take care of it. And if they think or I think that I am not able to sort things out, I will kick the ball to them"* (as interviewee G11). This statement suggests that management accountants in German corporations have delegated functional responsibility to preselect information and express recommendations for action before management is taking charge. In eight Brazilian and seven German firms, management reports contain predominantly quantitative information in terms of figures with only minimal explanatory notes. Management accountants expect that the clients of their reports have sufficient expertise and the necessary time to adequately interpret this information. Hence, the presented figures and the corresponding business processes are not connected to each other. In some corporations, meetings are held in which management accountants verbally comment on the figures presented in reports.

In contrast, comprehensive annotations are part of the management reports in the remaining five corporations (two Brazilian and three German firms). Beyond particular figures, performance reports include additional explanations of the underlying transactions. Moreover, management accountants add value by giving assessments and developing recommendations for action. The respondents from these corporations substantiated this report format with the limited informational value of figures without explanations and interpretations. In these corporations, performance reporting usually serves not only for the observation of current operations but also for variance analysis and the detection of emerging problems. In this respect, management accountants identify potential risks and propose countermeasures. Performance reporting tends to be more detailed in the responding Brazilian companies compared to the German firms. In Brazil, management reports often include almost entirely quantitative information. Thus, management accountants do not provide assistance other than data provision. In contrast lean accounting prevails in the German companies.

#### **5.4 Information Technology**

Brazil is currently undergoing a significant change in information systems. While most companies operated a variety of isolated systems until recently, seven firms from our sample already ran integrated Enterprise Resource Planning Systems (ERP-systems) or were in an implementation phase. In this context, companies rely on the established German or US software. In Germany, eight corporations were using the SAP standard software. At the time of the interviews, the systems were being implemented or the implementation had just been completed in four of the Brazilian corporations. In company B8, methodological challenges occurred even though employees were intensively instructed on the new software before its implementation. However, the underlying concept of MA as well as the available instruments was considered unfamiliar. Another Brazilian interviewee explained that the main reason for the introduction of SAP was the inherent adoption of international best practices injected into the company through the software. However, the downside is the limited flexibility which is offered by standardized software systems. Therefore, the introduction of SAP has caused a considerable need for amendments as *"it often comes up with a logic that is not the logic of our business"* (Interviewee B11). In Germany, all corporations with integrated information systems had been using them for several years. The German interviewees also stressed the limited flexibility with regard to specific analyses. For this reason, evaluations carried out in Excel spreadsheets often supplement the existing standard software. Advantages identified by our interview partners are a more efficient consolidation, the reduction of administrative processes and a more

accurate disclosure of the causes of deviation. Other German and Brazilian corporations use self-developed and fragmented information systems. In an extreme case, a German corporation runs more than 200 isolated systems.

In summary, we conclude that integrated ERP-systems in Germany are more advanced than those in Brazil. However, a tendency toward a standardization of IT-systems can be observed in Brazil by which international best practices of MA find their way into Brazilian corporations. In both countries, the German SAP software is most widely used.

### 5.5 Challenges of Management Accounting

We identified specific problems with respect to MA in all sample companies. From the corresponding answers, we extracted 68 problems in Brazil and 40 problems in Germany that were classified and allocated to different main categories, as presented in figure 3.

Obviously, many Brazilian companies face problems with processing and response times in MA. The MA departments currently have problems meeting relevant deadlines as management expects continuously decreasing lead times. In addition, several Brazilian and German interviewees consider a limited acceptance in the different business units to be an important challenge for MA. This also includes a refusal on the part of the business units to use MA information.

Interestingly, our German interviewees reported a lack of acceptance of MA in the business units at the same frequency. This observation is surprising since MA was established in German corporations approximately two decades before it was introduced to Brazilian firms. Further challenges for MA in German corporations are technical problems with respect to consolidation and reporting processes. These comprise the further development of the management reports, theoretical considerations about the quality and quantity of information to be included and the corresponding cost of implementing changes.

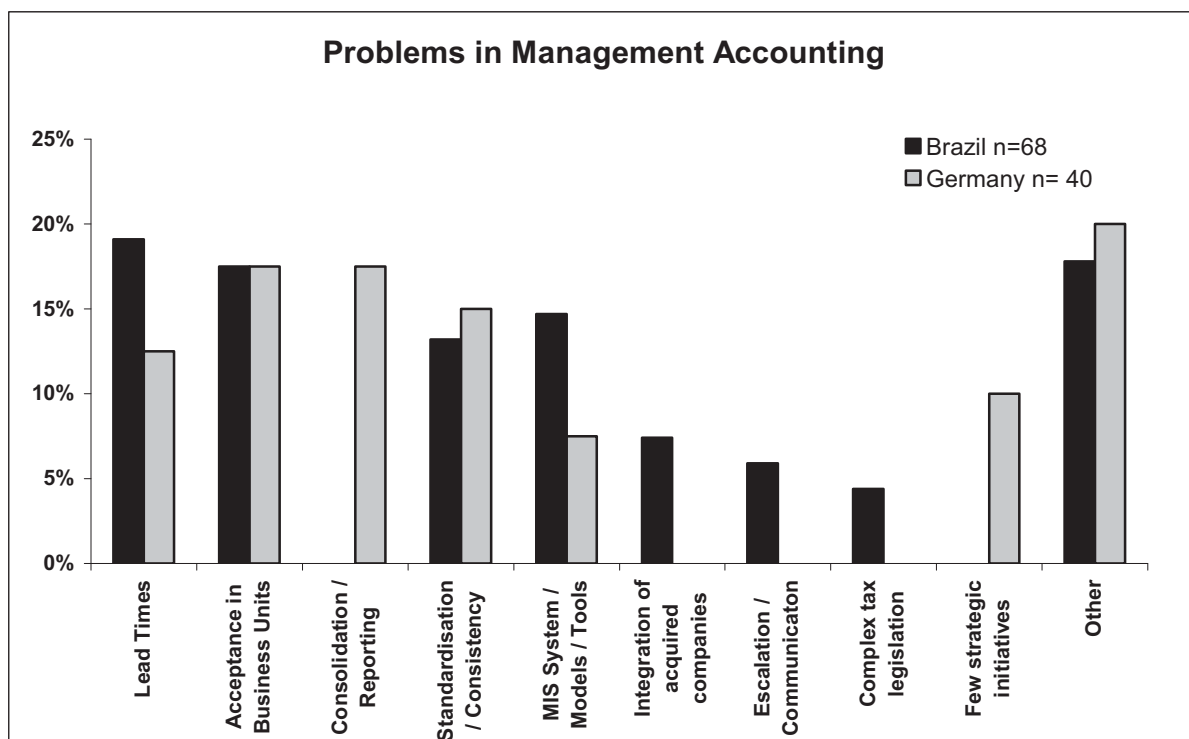


Figure 3: PROBLEMS RELATED TO MANAGEMENT ACCOUNTING IN THE INTERVIEWED COMPANIES (INCLUDING MULTIPLE ANSWERS)

We identified the Brazilian tax legislation as a relevant variable that affects local MA processes. Furthermore, our interview partners revealed that exchange rates and information technology are additional important contingency variables that have a strong influence on Brazilian MA. However, they are not considered important factors in Germany. Exchange rate volatility constitutes a significant problem for Brazilian companies as fluctuations in exchange rates do not only bear the risk of debt overloads when corporations borrow in other currencies but also significantly influence the results in local currency realized at the Brazilian headquarters. Thus, managing financial derivatives is a key challenge for Brazilian finance and MA departments. Contrary to our expectations, we did not find evidence for the influence of inflation or high levels of interest rates on MA practices.

## 6. DISCUSSION AND IMPLICATIONS

The present paper adds to two streams of literature. First, we extend the literature on CMA with empirical evidence from Brazil. Second, we provide more insight into German MA since we use German corporations as a reference. In addition, we identify contingency variables that have an impact on Brazilian MA systems.

From our interviews with management accountants in German and Brazilian corporations, we can establish that corporations in both countries have comprehensive MA and control systems. The MA function is mainly interpreted as modern management and decision support. These results confirm the developments that are observed in other transition countries, such as India and South Africa (Anderson and Lanen, 1999; Waweru et al., 2004). Our study reveals that information supply and decision support represent the main tasks of MA in Brazil and Germany.

While current practices are similar, the MA function in these two countries has shown different developments. Whereas MA was first established in German corporate practice in the 1970s, our interview partners confirm that innovations did not occur in a linear way but that they have gained importance exponentially during the last ten years. While academic qualifications traditionally play an important role in German MA (Ahrens and Chapman, 1999), Brazil is on its way to catch up on international standards and currently further professionalizes MA at a rapid pace.

In general, we conclude that in Brazil, MA possesses well-developed processes and practices that exceed those applied in other Latin American countries (Collins et al., 1997). Regarding the contingency variables, our results remain ambiguous. On the basis of our interviews, we conclude that the complexity of the Brazilian tax legislation represents a major challenge for local MA. In addition, we found evidence that supports the relevance of environmental uncertainty and technology. Considering that most Brazilian corporations prepare comprehensive reports, our findings support previous research on contingency theory, which has demonstrated that managers use a broad spectrum of accounting information for decision making under conditions of high environmental uncertainty (Chenhall and Morris, 1986; Gordon and Narayanan, 1984; Gul and Chia, 1994; Chong and Chong, 1997). Nevertheless, we found only a few special practices (e.g., routines for handling financial derivative instruments in two Brazilian companies) that companies had developed to adapt to their environmental conditions.

In this respect our results do not support the findings reported for South Africa by Luther and Longden (2001).

The same applies for Hofstede's (1983a; 1983b) culture dimensions which characterize Brazil as a high power distance/low individualism country. While these cultural attributes predict a rather passive attitude of MA and a more centralized planning approach in Brazil, we found that budgeting processes are participative. Only the Brazilian tendency to create information overloads in their reports may serve as an indicator for higher power distance. German Management accountants tend to act more autonomously and report mostly aggregated information. However, Brazilian managers demand detailed information to get a complete picture of the company. Overall, our results support Merchant et al. (1995) who also found only a weak influence of the Hofstede dimensions on management processes.

In contrast, technology had a significant influence on MA systems in Brazil. Most responding companies have started to implement ERP-systems and rely on standardized software of the major providers. Thus, they import a variety of standard instruments for cost accounting and MA. In particular, Brazilian companies adopt typical German cost accounting features such as marginal costing and calculations with contribution margins. Accordingly, our evidence supports the anecdotal findings of Sharman and Vikas (2004) on the international diffusion of German costing methods. In addition, these findings help to explain the high development stage of Brazilian MA systems and the common use of sophisticated instruments and practices. In contrast to other BRIC countries (e.g., India; Joshi, 2001), advanced MA practices such as benchmarking and the balanced scorecard are widely used in Brazil because of an intensive knowledge import via the implementation of standard software. Furthermore, internationally trained staff serves as a catalyst for importing MA knowledge.

We noticed that conceptual considerations often prevail in the German corporations. For this reason, we suggest that the strong conceptual focus of German MA research (Messner et al., 2008; Wagenhofer, 2006) may influence MA practices in Germany. Considering that management accountants at higher levels hold often a Ph.D. degree, their academic training may be a driver of this development.

However, our results also show that in both countries, a gap remains between claims and the *de facto* implementation of modern MA systems. While Brazilian management accountants mainly struggle with lead times, ERP-implementation and gaining acceptance in the business units, their German counterparts face conceptual and technical problems with consolidation and the design of reporting formats. While lead-time problems may result from rapid growth and internationalization, ERP rollouts should be accompanied by qualified experts to ensure that the basic methodology is really understood. Thus, perceived deficits in standardization of MA processes can be reduced.

Regarding the low acceptance of MA in Brazilian business units and the reluctance to use corresponding information, MA has to promote its services more proactively and, at the same time, establish an open dialogue to create realistic expectations for lead-time improvement. On the other hand, German management accountants may become more pragmatic in their methodological considerations, which may increase their acceptance accordingly. In both countries, an improved commitment of the business units by enhanced cooperation could significantly support more efficient MA processes.

Overall, our results on MA systems in Germany and Brazil show many more similarities than would have been predicted by the contingency framework. As the two countries are substantially different in two of three contingency variables analyzed in the present study, we would have expected MA and control systems that are accordingly adapted to environmental or cultural differences. In this respect, Granlund and Lukka (1998) and Shields (1998) argue that MA is characterized by an increasing convergence caused by institutional isomorphism (DiMaggio and Powell, 1983). Nevertheless, their empirical evidence only refers to European countries. Our results show that these tendencies not only occur within integrated economic regions such as the EU, but also seem to have an effect on transition economies and BRIC states. Our findings suggest that ERP-systems implemented with the help of standard software solutions and internationally trained staff serve as strong convergence drivers that obviously lead to a rapid adoption of internationally established accounting practices. Further research on CMA should therefore consider theoretical frameworks focused on convergence of MA and control systems.

The results of the present study have to be interpreted in the light of several limitations. Regarding the theoretical framework, our qualitative approach did not allow an examination of the classic structure-performance relationship as hypothesized by contingency theory. However, as we add to the scarce literature on CMA in transition economies, a field study design allows us to address more complex questions and enables us to more easily detect current or rapidly changing developments as compared with surveys (Lillis and Mundy, 2005). At the same time, we were able to collect detailed confidential information on MA processes in the sensitive Latin American business environment (Collins et al., 1997). Even though our industry sample does not cover the entire German or Brazilian industry spectrum, it significantly exceeds other matched-sample field studies on CMA (Merchant et al., 1995) in size, thus providing a solid base for further research in this area.

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## THE IMPACT OF INTERORGANISATIONAL INTERFACE PROBLEMS ON A COMPANY'S FLEXIBILITY

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### ABSTRACT

*This paper shows the impact that interorganisational interface problems have on the flexibility of companies. The collaboration of suppliers and buyers is strongly affected by problems at interorganisational interfaces. These interface problems lead to interruptions in processes and strongly influence the flexibility of companies. Based on an empirical investigation, the current paper presents specific problems that arise at interorganisational interfaces, such as organisational, personnel, procedural, cultural and technical problems. To analyse the relationship between interface problems and the lack of flexibility at the supplier-buyer interface, 70 international companies were investigated through an online-questionnaire. The empirical results indicate that to enhance flexibility, it is essential for a company to accurately plan, design and monitor interorganisational interfaces regarding the flow of goods and information.*

**Keywords:** interface problems, supplier-buyer relationship, flexibility

### 1. INTRODUCTION

The collaboration of suppliers and buyers and the coordination of joint processes at interorganisational interfaces are the subjects of recent literature. In this context, intraorganisational interfaces such as research and development and marketing and interorganisational interfaces between suppliers and buyers are considered. The flow of material and information between suppliers and buyers and their logistical interfaces have been investigated in previous studies. These studies have indicated that interorganisational interfaces must be planned and structured for successful collaboration between suppliers and buyers (Cannon and Perreault, 1999; Frohlich and Westbrook, 2001; McIvor and Humphreys, 2004; Stefansson and Russel, 2008; Ashenbaum and Terpend, 2010). Consequently, the design of interorganisational interfaces has a strong impact on the performance of these companies. For many companies in various industries flexibility is one of the most important factors contributing to competitiveness and profitability. Because a network of relationships and transactions connects suppliers and buyers, they must coordinate their resources, capabilities and logistical processes at interorganisational interfaces to create an efficient collaboration and to guarantee target-oriented performance even beyond company boundaries (Connolly et al., 2005). However, insufficiently planned, designed and monitored interfaces between suppliers and buyers lead to a variety of interface problems within interorganisational value-added processes. These interorganisational interface problems have a significant influence on the supplier's and the buyers' flexibility. Therefore, it is essential that the flow of goods and information between suppliers and buyers is accurately planned, designed and monitored. However, there currently is insufficient scientific research into the effects of interorganisational interface problems on the performance of companies (Stefansson and Russel, 2008; Hsu et al, 2008; Richey et al, 2010). Therefore, this paper analyses the effects that interorganisational interface problems have on flexibility. For this paper, databank and desk research was conducted to review internationally published literature and approaches concerning supplier-buyer relationships, interface problems and interface management. Furthermore, we empirically investigated problems at the supplier-buyer interface of 70 international companies. By using correlation and regression analysis, we examined the impact of interface problems on flexibility. Additionally, based on the achieved results, the connections between the interface problems we identified are mapped through recursive causal structural equation modelling. Finally, implications for enhancing-flexibility by managing the interfaces between companies are provided.

## 2. BASICS OF INTERFACES AND INTERORGANISATIONAL INTERFACE PROBLEMS

Inter-organizational interfaces occur as a consequence of the division of labour between suppliers and buyers. Accordingly, an interface is defined as a link at the boundary between two socio-technical sub-systems that is generated in the context of the division of labour, whereas the two sub-systems perform tasks and processes in common within an overall system (Lawrence and Lorsch, 1967). Moreover, an interorganisational interface exists between two definable processes, and due to a defined interaction, an exchange, such as a transfer or sharing of goods and/or information takes place at the interface. Additionally, if the interactions between suppliers and buyers at the interorganisational interface are not properly coordinated, interface problems can occur (Hauschildt, 2004). Due to these characteristics of interorganisational interfaces, it is essential to consciously plan, design and monitor the interactions between suppliers and buyers, otherwise a lack of coordination can cause interface problems and negatively influence company's flexibility. Because there are many causes of interface problems, they affect the flow of information and material between the interacting partners in different ways and require differentiated methods of resolution (Brockhoff, 1989; Morash et al., 1997). Therefore, interface problems between companies can be classified as organisational, personnel, cultural, procedural and technical interface problems (Winkler and Pichler, 2011):

- *Organisational interface problems* often occur due to cross-functional task performance between suppliers and buyers and the subsequent concentration on core competencies. This leads to unnecessary complexity, loss of joint objectives, confusion of responsibility between partners and barriers to knowledge. Complexity increases in relation to the number of partners at the interorganisational interface, because the divided tasks must be matched and performed economically. Partners can fail to meet joint objectives because of a lack of leadership from management and a lack of coordination at the interface. Accordingly, the interacting partners can lose the sight to their overall goal. The confusion of responsibility between buyers and suppliers can create problems for executing tasks and processes because interorganisational interfaces are inadequately planned. Uncertain responsibilities inevitably lead to overlaps in decision-making duties and disrupt processes at the supplier-buyer interface. Furthermore, vital knowledge or information can be obscured due to structural, procedural, political and technical barriers at the supplier-buyer interface. For example, procedural barriers such as an organisation's established guidelines and rules make it difficult or even impossible to share existing knowledge or information within the supplier-buyer relationship. Political barriers can block the transfer of knowledge or information because company lacks the willingness or personal interest to share it (Herbst, 2002; Moberg et al., 2003; Barki et al., 2005; Barker, 2008).
- *Personnel interface problems* in supplier-buyer relationships originate from capability and willingness barriers. These problems result in conflicts, organisational thinking as well as uncertainty and mistrust. Conflicts occur through mutual influences of the interacting partners or if the partner's objectives are contrary. Therefore, conflicts can lead to entrenched opinions or objectives and insufficient communication between suppliers and buyers. Organisational thinking can arise when employees fail to recognise and solve problems between the interacting companies, or from a fear of a loss of control to the partner. This leads to insufficient communication and the absence of information transparency at the interorganisational interface. Uncertainty and mistrust between the partners occurs if they have negative expectations for the collaboration, for instance, due to information that was communicated incorrectly or incompletely. Uncertainty and mistrust often leads to tasks being insufficiently completed.
- However, *cultural interface problems* may occur because of possible cultural differences between suppliers and buyers. These differences originate from diverse moral concepts and attitudes reflected in the thoughts, feelings and actions of the interacting partners. Additionally, cultural interface problems can originate from differences in the qualifications of each partner's employees. This can result in misunderstandings, incompatible objectives, the misinterpretation of facts and conflicts between suppliers and buyers (Morash et al., 1997; Ellinger et al, 2006; Silber, 2007; Jia et al., 2010).
- *Procedural interface problems* can emerge as a result of cross-functional task performance in which a transfer of goods and/or information at the supplier-buyer interface is necessary. During the transfer of goods and information, quality-control problems can emerge which negatively affects the interaction between suppliers and buyers. Timing is another procedural interface problem within supplier-buyer relationships. The data transmission systems used by buyers and suppliers are often not compatible at the supplier-buyer interface. Because the data are often adjusted sometime after the transmission for further processing, which can result in unnecessary



waiting times. Regarding the flow of goods, waiting times arise due to intermediate storage problems at the supplier-buyer interface (Osterloh and Frost, 2006; Silber, 2007).

- *Technical interface problems* emerge due to non-integrated communication and data transmission systems between suppliers and buyers (Barki et al, 2005; Winkler and Pichler 2011), which leads to a media discontinuity at the inter-company interface. Media discontinuities often require data and information to be reformatted to be compatible with different systems and formats. Consequently, additional workloads and/or transmission errors can occur. Moreover, interruptions in the flow of materials may originate in supplier-buyer relationships because of incompatible technical systems, such as transport or packaging systems.

These interorganisational interface problems negatively affect a company's flexibility and lead to negative economic results. Therefore, it is essential that interorganisational interfaces between suppliers and buyers are jointly planned and monitored (Winkler and Allmayer, 2012).

### **3. EFFECTS OF INTERORGANISATIONAL INTERFACE PROBLEMS ON FLEXIBILITY**

Flexibility is an important factor in the success of the relationship between interacting partners at the supplier-buyer interface, because suppliers and buyers act under market uncertainty with the expectation that they will receive additional information as markets develop. When additional information is received, suppliers and buyers can revise prior decisions and select a different option if necessary. Therefore, flexibility is defined as the ability to respond effectively to changing circumstances with little effort and/or costs (Upton, 1995; Winkler, 2009). However, interorganisational interface problems lower a company's ability to effectively change. Hence, the flexibility between suppliers and buyers is reduced. These arguments and the results of the conducted literature review lead to the following assumptions, which postulate a negative relation between specific interface problems and flexibility:

H1: Organisational interface problems reduce flexibility.

H2: Personnel interface problems reduce flexibility.

H3: Procedural interface problems reduce flexibility.

H4: Cultural interface problems reduce flexibility.

H5: Technical interface problems reduce flexibility.

#### **3.1 Methodology of the empirical research**

The survey was conducted using an online questionnaire. Scales were developed based on an extensive review of the relevant literature to ensure their validity. The questionnaire was tested on procurement and supply chain managers in different industries. To test the assumptions, the survey was carried out on purchasing, sales and supply chain managers from international companies, regardless of their firm's size or industry focus. Therefore, 462 employees of international companies from Germany and Austria were contacted. The required data were collected during the winter of 2011/2012. Hence, 133 questionnaires were received and 70 were considered appropriate for the survey. The low response rate to the received questionnaires was attributable to the length of the questionnaire. Consequently, the response rate was 15.15 %, which slightly exceeds the average response rate of mail surveys. Furthermore, the risk of non-respondent bias was analysed. It was assumed that late respondents show a similar responsiveness as non-respondents (Armstrong, 1977). Therefore, the completed questionnaires were categorised into three equal groups based on the "date of the first call". Then, the responsiveness of the first and the last group was compared. This analysis did not show any significant difference in the mean of the respondents of both groups. This result indicated that there was no difference between respondents and non-respondents. PASW 18 software was used for the statistical analysis of the data. In step one, the Pearson correlation analysis was used to check if a relationship between interface problems and flexibility existed. In step two, a stepwise multiple linear regression analysis was used to test the effect of interface problems on flexibility. This method was chosen because all variables were interval scaled and because the effects of variables and groups of variables were analysed in a controlled manner. In the final step, a recursive causal structural equation model was used to demonstrate the links between the identified interface problems in the context of flexibility.

### 3.2 Findings of the empirical research

The survey-based empirical analysis relates to the occurrence of interface problems between buyers and suppliers and the estimated effects of these problems on flexibility. Furthermore, the degree to which interface problems impact flexibility was analysed.

Table I reflects the estimation of the respondents concerning the occurrence of interorganisational interface problems in their supplier-buyer relationships. The analysis showed that the interface problems discussed in existing literature also exist in praxis. Most of the interface problems were estimated to occur at interorganisational interfaces. Therefore, the occurrence of most of the discussed interface problems within supplier-buyer relationships was validated. Only the procedural interface problems known as “quality problems” in the material flow and the cultural interface problem of “different culture” were not clearly confirmed by the respondents. Furthermore, over 80 per cent of the respondents considered a relationship between interface problems and the reduction of flexibility. Therefore, the overall assumption that interface problems have negative effects on flexibility was generally verified.

**TABLE I - OCCURENCE OF INTERFACE PROBLEMS**

interface problem cluster	interface problem	fully agree (%)	rather agree (%)	rather not agree (%)	not agree at all (%)
organisational	complexity	40.0	50.0	8.6	1.4
	loss of joint objectives	17.1	47.1	28.6	7.1
	poorly identified responsibilities	75.7	21.4	1.4	1.4
	barriers to know ledge	17.1	58.6	20.0	4.3
personnel	conflicts	42.9	37.1	17.1	2.9
	organizational thinking	45.7	44.3	7.1	2.9
	uncertainty & mistrust	44.3	35.7	17.1	2.9
procedural	quality problems in the material flow	4.3	34.3	48.6	12.9
	contents distortions in the information flow	8.6	74.3	11.4	5.7
	timing problems in the material flow	5.7	48.6	40.0	5.7
	timing problems in the information flow	10.0	42.9	41.4	5.7
cultural	different culture	10.0	32.9	47.1	10.0
	different qualification	8.6	51.4	34.3	5.7
technical	system problems in the material flow	15.7	48.6	25.7	10.0
	transfer problems in the information flow	20.0	52.9	20.0	7.1

The correlation between the independent variable interface problem and the dependent variable flexibility is reflected in table II. The Pearson correlation showed six significant relationships between the variables interface problem and flexibility. These relationships were between flexibility and the organisational interface problems of “loss of joint objectives” and “barriers to knowledge”, the cultural interface problems of “different culture” and “different qualification” as well as between the technical interface problems of “system problems” in the material flow and “transfer problems” in the information flow. Hence, the independent cultural variable “different culture” was the variable with the most significant correlation with flexibility with a coefficient of 0.319 at  $p < 0.01$ . In this context the existence of the interface problem “different culture” was confirmed.

**TABLE II - CORRELATION INTERFACE PROBLEMS AND FLEXIBILITY**

interface problem cluster	interface problem	flexibility r
organisational	complexity	0.056
	loss of joint objectives	0.298*
	poorly identified responsibilities	0.129
	barriers to know ledge	0.271*
personnel	conflicts	0.038
	organizational thinking	0.223
	uncertainty & mistrust	0.142
procedural	quality problems in the material flow	0.137
	contents distortions in the information flow	0.040
	timing problems in the material flow	0.182
	timing problems in the information flow	0.072
cultural	different culture	0.319**
	different qualification	0.245*
technical	system problems in the material flow	0.245*
	transfer problems in the information flow	0.248*

Note: \*p < 0.05; \*\*p < 0.01; p < 0.001\*\*\*

To test the effects of interface problems on flexibility a stepwise multiple linear regression analysis was performed. This method included all variables in each step with the highest partial correlation coefficient and compares them with the dependent variable. At every stage, the included independent variables were analysed and the independent variable with the smallest partial correlation coefficient was excluded if the regression coefficient was not significant. The significance of the regression coefficients of the hypothesised independent variables was examined to determine support for the study's assumptions.

Table III shows the result of the stepwise regression analysis with flexibility as the dependent variable. All regression models with associated F-tests at  $p < 0.01$  were significant. The regression model of the first step showed that the cultural interface problem "different culture" was the variable with the highest partial correlation coefficient, with a significance of  $p < 0.01$ . The variance of the flexibility variable was 10.2 per cent. The inclusion of "barriers to knowledge" as another significant variable in the second model, explained a significantly larger variance of 17 per cent. Furthermore the  $\beta$  values of the significant independent variables were relatively high.

**TABLE III - REGRESSION INTERFACE PROBLEMS AND FLEXIBILITY**

Step	interface problem	flexibility		
		Beta	R2	F
1			0.102	7.71**
	different culture	0.319**		
2			0.170	6.86**
	different culture	0.315**		
	barriers to knowledge	0.261*		

Note: \*p < 0.05; \*\*p < 0.01; p < 0.001\*\*\*

The regression model shown in table III has several implications. It shows that the cultural variable "different culture" had a significant negative impact on flexibility, but that "different qualification" did not. Furthermore, the organisational variable "barriers to knowledge" significantly reduced flexibility within companies, whereas "loss of joint objectives" did not. Moreover, this analysis did not show that technical interface problems affected flexibility.

Suppressor effects explained the different results between correlation analysis and stepwise regression analysis. The examined interface problems also correlated among themselves and consequently influence each other. Because the effects of interface problems as independent variables on the dependent variable flexibility were jointly analysed, suppressor effects occurred. Hence, the effects of the variables "loss of joint objectives", "different qualification", "system problems"

and “transfer problems” were subdued by another variable. To investigate the suppressor effects, a structural equation model was used. The validity of the model was confirmed by Chi-square 16.645, df 14 and p 0.276. Additionally, the fit indices GFI of 0.940 and CFI of 0.969 suggested a reasonable fit for the model as they were above the recommended thresholds of 0.9. Furthermore, the fit indices RMSEA of 0.052 supported this result, as it was far below the recommended threshold of 0.08. The results of the structural equation model are shown in table IV.

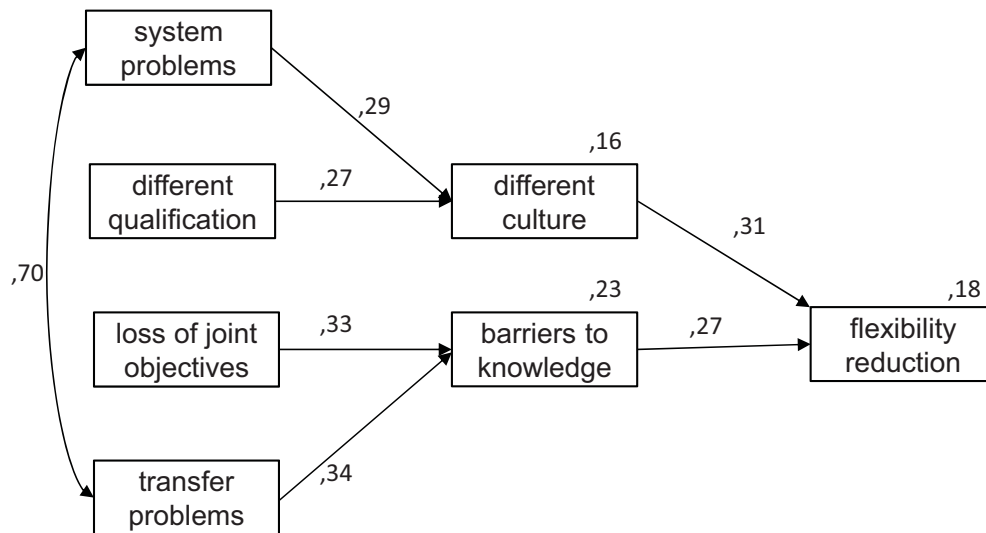
**TABLE IV - MAXIMUM LIKELIHOOD ESTIMATES**

effects			unstandardised estimate	S.E.	t-value
different qualification	→	different culture	0.302	0.124	2.445*
system problems	→	different culture	0.271	0.104	2.615**
loss of joint objectives	→	barriers to know ledge	0.296	0.095	3.133**
transfer problems	→	barriers to know ledge	0.307	0.096	3.196***
different culture	→	flexibility	0.250	0.089	2.815**
barrieres to know ledge	→	flexibility	0.231	0.096	2.421*

Note: \*p < 0.05; \*\*p < 0.01; p < 0.001\*\*\*

The structural equation model showed how the variables interact and affect flexibility. Furthermore, it demonstrated that the variables “different culture” and “barriers to knowledge” suppress the direct effects of “system problems”, “different qualification”, “loss of joint objectives” and “transfer problems” on flexibility. Through the variable “different culture” the variables “system problems” and “different qualification” indirectly affected flexibility. Due to the different education and training backgrounds of the interacting partners, different work cultures collide at the interface. Hence, different patterns of actions and organisational cultures are connected at the interorganizational interface. Consequently, the variable “different qualification” influenced flexibility through the variable “different culture”. The variable “system problems” affected flexibility through the variable “different culture”. This can be explained by the reciprocal influence of culture and technology. During the transfer of technology between the interacting partners, the contents of the partner’s organisational culture are also implicitly transmitted. This implies cultural conflicts, because a specific knowledge or application of machines or systems is typically connected with changes in working habits (Hermeking, 2001). Furthermore, the variables “system problems” and “different qualification” explained 16 per cent of the variance of the variable “different culture”. Moreover, the variables “system problems” and “transfer problems” strongly inter-correlated with a path coefficient of 0.70, which was the highest path coefficient in the model. The correlation between the two variables is explained by the fact that incompatible technical systems often result in non-integrated data transmission systems at the interorganisational interface. Additionally, the variables “transfer problems” and “loss of joint objectives” indirectly affected flexibility through the variable “barriers to knowledge”. Due to non-compatible communication and data transmission systems at the interface, as well as barriers to using technology, the transfer of information and knowledge at the interorganisational interface is interrupted. Hence, gaps in knowledge and/or information can occur at the interface. Consequently, the variable “transfer problems” influenced flexibility through the variable “barriers to knowledge”. Moreover, due to a lack of coordination at the interorganisational interface the interface problem “loss of joint objectives” can occur. This leads to difficulties in communication at the interorganisational interface, which result in gaps of information and/or knowledge. Therefore, the variable “loss of joint objectives” affected flexibility through the variable “barriers to knowledge”. Additionally, 23 per cent of the variance of the variable “barriers to knowledge” was explained by the variables “transfer problems” and “loss of joint objectives” in this model. The relationship between flexibility reductions through the identified significant interface problems was represented in the model with a path coefficient of 0.31 for “different culture” and 0.27 for “barriers to knowledge”. Furthermore, the variance of the variable “flexibility” was explained by 18 per cent in this model as shown in figure 1.

FIGURE 1 PATH MODEL



### 3.3 Discussion of the empirical research findings

The correlation analysis showed that several interface problems significantly affected the flexibility of companies. The identified effects of interface problems on flexibility from the correlation analysis were partially confirmed with stepwise multiple regression analysis. Suppressor effects explained the slightly different results between correlation analysis and stepwise regression analysis, as it is shown in the structure equation model. It showed that the examined interface problems also interacted and consequently influenced each other. As the effects of the significant interface problems on the dependent variable flexibility were jointly analysed, suppressor effects occurred. However, according to the structural equation model, the different results of the correlation and the stepwise multiple regression analysis were explained and considered validated. Furthermore, stepwise multiple regression analysis verified 17 per cent variance of flexibility. This result is confirmed with structural equation modelling, which explained the variance of flexibility by 18 per cent. Hence, the study's assumptions were partially confirmed. Organisational interface problems were found to interrupt processes between buyers and suppliers. More precisely, "barriers to knowledge" and "loss of joint objectives" were found to influence the flexibility of companies. Therefore, assumption H1 was partially supported. However, the assumptions concerning the negative effects of personnel and procedural interface problems on flexibility were not confirmed by this research. Therefore, the assumptions H2 and H3 must be rejected. Moreover, the study showed that the cultural interface problems of "different culture" and "different qualification" lower the flexibility of companies. Additionally, "different culture" was found to be the most significant interface problem with a coefficient of 0.31 at  $p < 0.01$ . Consequently, assumption H4 was confirmed. Furthermore, technical interface problems were also found to hinder processes at the interface between buyers and suppliers. "Transfer problems" in the flow of information were found to negatively influence flexibility. Additionally, "system problems" in the flow of material also had a significant negative influence on the flexibility of companies. Therefore, assumption H5, technical interface problems hinder flexibility, was shown to be true.

## 4. CONCLUSION

The purpose of this paper was to explain to what degree interorganisational interface problems influence the flexibility of companies. Furthermore, the relevance and classification of inter-company interface problems were presented. The results of the empirical research confirmed the occurrence of organisational, personnel, procedural, cultural and technical interorganisational interface problems within supplier-buyer relationships in praxis. In this context, only the procedural interface problem "quality problems" in the flow of material could not be clearly confirmed. Moreover, concerning flexibility, three of five assumptions were verified by the study, with one confirmed partially and two fully. The organisational interface problems "loss of joint objectives" and "barriers to knowledge", the cultural interface problems "different culture" and "different qualification" as well as the technical

interface problems “system problems” and “transfer problems” were found to significantly reduce flexibility. Few previous studies have examined the relationship between interface problems and flexibility. Therefore, the results from this study serve as empirical evidence of these effects. The slightly different results between correlation and regression analysis can be explained by suppressor effects, because the analysed interface problems interact with one another. Regarding the structural equation model, it was shown how the analysed interface problems are connected and negatively influence flexibility. Furthermore, it was demonstrated that the interface problem “different qualification” and “system problems” indirectly affected flexibility through the interface problem “different culture”. Additionally, the interface problems “transfer problems” and “loss of joint objectives” had an indirect effect on flexibility through the interface problem “barriers to knowledge”.

Furthermore, the relationships between significant interface problems in this study result in some managerial implications. There are several interface problems to take into consideration and overcome in order to enhance the flexibility of companies. Consequently, selected interface management instruments must be used to allow a target-oriented management of interorganisational interfaces. Therefore, a number of non-hierarchical integration as well as information and communication instruments can be used. These interface management instruments are divided into hierarchy-neutral, hierarchy-supplementary and hierarchy-replacing instruments. Hierarchy-neutral instruments are based on cultural and individual-oriented mechanisms and include reward systems, job rotations, exemplary performance of superiors, resource development and organisational culture. Hierarchy-supplementary instruments comprise, for instance, teams, project groups or boundary spanners. These instruments are additionally integrated into existing hierarchical structures and enable collaboration outside a hierarchy at the interorganisational interface. Hierarchy-replacing instruments, which partly substitute the hierarchy, are divided into formal and informal instruments. Formal instruments include standardisations via programs or regulations. Regarding informal hierarchy-replacing instruments, the coordination at the interorganisational interface is conducted through the interacting partners themselves. Information and communication technologies such as electronic document management, databases, electronic data interchange, weblogs, wikis and the Internet are instruments that can be used to overcome coordination problems and enhance flexibility. Through these instruments organisational, cultural, personnel and technical interface problems can be reduced (McIvor et al., 2001; Herbst, 2002; Lee et al., 2007; Hsu et al., 2008). Furthermore, to enhance performance of the relationship between suppliers and buyers, an integrated interface management with appropriate interface management instruments is required. Hence, it is essential for companies interacting internationally to accurately monitor their interfaces to realise higher flexibility.

Some limitations can be identified in this study. The study was limited to German and Austrian companies and could consequently be limited to specific German and Austrian circumstances. Additionally, due to the relatively low path coefficients in the structural equation model, it could be criticised that the negative impact of interface problems on flexibility was not conclusive enough. Moreover, the explained variance of 18 per cent of the variable flexibility in the model indicated that other factors in addition to the identified significant interface problems may influence the reduction of flexibility in companies. Hence, these effects should be analysed in further research studies.

This study was deductive and tested assumptions derived from existing literature. It focused on interorganisational interface problems and their impact on flexibility. Furthermore, the perspectives of both suppliers and buyers were taken into consideration. The potential issues for future research are related to the importance of interorganisational interface problems within supplier-buyer relationships and their effects on companies.

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# THE “SOURCE BOARD”: A TOOL FOR IDENTIFYING, CLASSIFYING AND VISUALIZING SOURCING STRATEGIES – ILLUSTRATED WITH THE EXAMPLE OF A BANK

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## ABSTRACT

*Selecting appropriate measures and combining them to create a holistic company strategy are keys for a company's sustainable success. The responsible decision makers within a company can choose between very different options, such as own production, outsourcing or co-operations, which also impact on each other outside of the various company divisions. In order to make informed decisions, a tool is required for visualizing a holistic sourcing strategy, identifying connectivity and providing guidance for future developments. Based on a fundamental understanding of value creation, the Source Board is such a tool. Here, its application is illustrated by the concrete example of a bank.*

**Keywords:** Sourcing Strategy, Sourcing Positioning, Sourcing Decision, Management Decision, Value Creation, Value Chain, Processes in Consumer Banking

## 1. INTRODUCTION

In order to raise its level of value creation, it is imperative that a company tackles the concept of “sourcing”, enabling it to focus on specific core processes, while other companies implement the less profitable ones. A sourcing decision must, however, be carefully considered, since it is a key factor behind a company's future competitiveness (Langhans, 2007). But in actual practice, it is frequently the case that decisions of this kind are not based on a theoretical foundation or detailed analysis of in-house value creation but principally on potential cost-savings in a sub-area of goods or services (Best/Weth, 2005 and Rebouillon/Bauer, 2001). Basing sourcing decisions on the observation of only one part of the whole is an insufficient measure, and this is demonstrated by the fact that the expected cost advantages frequently fail to materialize and that, in a lot of cases, problems arise with regard to quality (Cooper/Kaplan, 1988 and Grum/Schneider/Frohmlüller, 2008).

This paper will demonstrate the relevance of an understanding of value creation if a company is to have sustainable success, and the special significance of the way in which sourcing decisions are handled. It also provides a systematization of potential sourcing alternatives (Section 2), and shows how a fundamental understanding of value creation finds application in a concrete case study from the finance industry (Section 3). The importance of an understanding of processes is highlighted and reflected in our Source Board. The Source Board is an analytical tool that facilitates sourcing decisions. Its compilation entails an intensive analysis of value creation and the processes involved within the company and results in an overview of sourcing positioning for developing strategies or benchmarking within the framework of strategic competitive positioning.

## 2. THE SIGNIFICANCE OF SOURCING FOR VALUE CREATION

First, in Section 2.1 we look at the significance of a fundamental understanding of value creation for the success of a company. Building on this basis, in Section 2.2 we examine the necessary modifications to this traditional understanding of value creation with regard to the long-term viability of companies, and look at the significance of sourcing. In Section 2.3 we provide a systematization of sourcing options, which includes on the one hand various strategies for companies and on the other hand serves as a basis for the necessary systemization of our Source Board, as introduced in Section 3.3.

### **An Understanding of Value Creation as a Foundation for a Company's Success**

Identifying a company's individual core competences and adjusting its business operations to fit these, enables a company to differentiate and to successfully position itself on the market. PORTER's value chain model, which was developed in the 1980s, is helpful for structurally depicting the strategically relevant activities of (producing) companies. The motivation of this model is the fact that competitive advantages cannot merely be elucidated by observing a company as a whole but rather that competitive advantages arise out of interplay between the various activities within a company (Porter, 2004). However, this is only the case if the product or service has an (identifiable) value for the customer (Ramírez, 1999 and Lombriser/Abplanalp, 2005). The value chain makes visible a company's

value creation, which is composed of the costs of resource input and the profit (or the profit margin). As Figure 1 shows, value creation is broken down into primary activities – which are linked to the production and the selling of a product and to customer service – and into support activities, which aid the implementation of these activities and in some cases enable it (Porter, 2004).

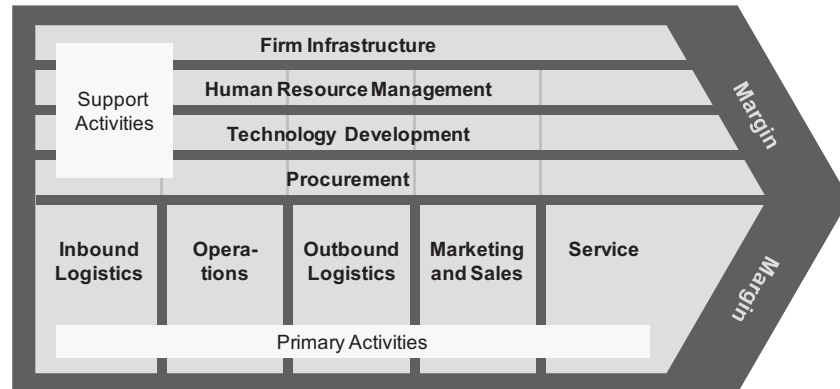


FIGURE 1: PORTER'S GENERIC VALUE CHAIN (PORTER, 2004)

PORTER named his 5 primary activities *inbound logistics*, *operations* (incorporating all production steps and all transformation activities), *outbound logistics*, *marketing & sales*, and *service*. His supporting activities are *firm infrastructure*, *human resource management*, *technology development* and *procurement* (Porter, 2004). Depending on the model's application, the value chain has to be adapted and modified to suit the specific features of a company. (This issue will be dealt with further on in this paper and illustrated by the case study).

If we take a closer look at the value chain, we notice that the activities are not only viewable in isolation of each other, but that linkages exist between them. Via these linkages, information or even tangible objects can be exchanged. If we extend our observation and go beyond the observation level of one single company, we can see "vertical linkages" between that company and its suppliers and customers. The company value chain is only a small part of a larger value chain system, to which other company value chains belong, e.g. those of the suppliers and buyers (Porter, 2004. For more detailed information about the structure of value creation, see e.g. von Nitzsch, 2008).

### Sustainability via a Changed Understanding of Value Creation

When secondary functions, such as IT, are completely outsourced, the relative vertical production integration within an individual company decreases. Service functions are reorganized; administration and production functions are, to a great extent, separated. Consequently, the traditional company business model with integrated value creation is being replaced by models of networked and cross-company production and service provision (Sokolovsky, 2005 and Speek, 2008).

In the literature, this particular development is referred to as *deconstruction*. It involves in particular "the decomposition and innovative reconstruction of the existing economic and organizational structures which define a business" (von Oetinger, 2000, translation author's own). The objective is to develop new business alternatives in such a way that the old and rigid stages of value creation are decomposed. In this way, innovative value creation architectures can be created as part of a value network (von Oetinger, 2000; Normann/Ramírez, 1993; Winkler/Slamanig/Kaluza, 2008; Winkler/Schmetisch/Kaluza, 2008 and Schnedler, 2001).

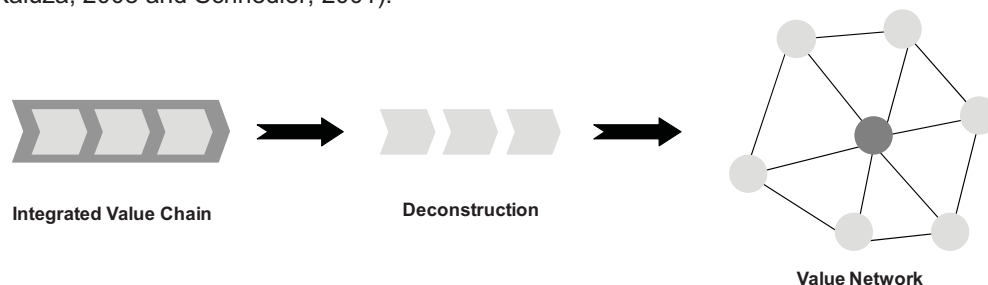
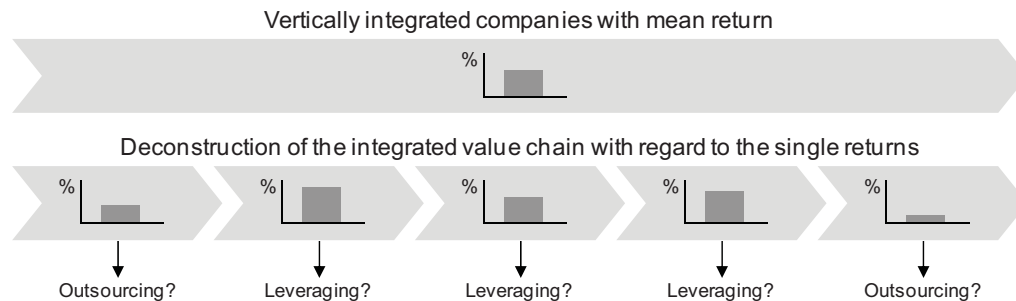


FIGURE 2: FROM A VALUE CHAIN TO A VALUE NETWORK (SCHNEDELER, 2001)

Until the late 1980s, the concept of “deconstruction” was little known, and company value chains were regarded as being relatively stable. Particularly larger companies occupied a great part of their industry’s value chain themselves, and had a high degree of vertical integration. One main reason for this situation was that of clearly differentiated markets which had arisen from the high costs which occurred when different value-added steps had to be coordinated. The enormous amount of data that had to be exchanged between these stages could only travel short distances, i.e. within a company (Heuskel, 1999). New I&C technologies – in particular the Internet – led to the end of the trade-off between the amount of information and the distance it had to travel, because its dissemination and processing became less expensive – and continue to do so (Evans/Wurster, 1997). Globalization and the related opening up, deregulating and harmonizing of world markets have also enabled global sourcing of products and services. Modern processing and distribution technologies have also made buying on the world market less expensive and have led to an enhanced quality of goods. All of these factors have contributed to the success of deconstruction (Stern, 2000).

In the wake of these multiple changes, many vertically integrated companies lost their biggest competitive advantages and a rigid relationship between the individual value creation stages was no longer imperative. These changes have had the effect that there are now less vertically integrated companies. Traditionally, profit is assessed as being the mean of all the value creation stages which are incorporated in a company. Through deconstruction of the value chain, each individual stage now has to compete with its alternatives (see Figure 3). For each task, the decision has to be made as to whether it is profitable within the company or whether another company could do it more profitably (Normann/Ramírez, 1998 and Winkler/Slamanig/Kaluza, 2008).



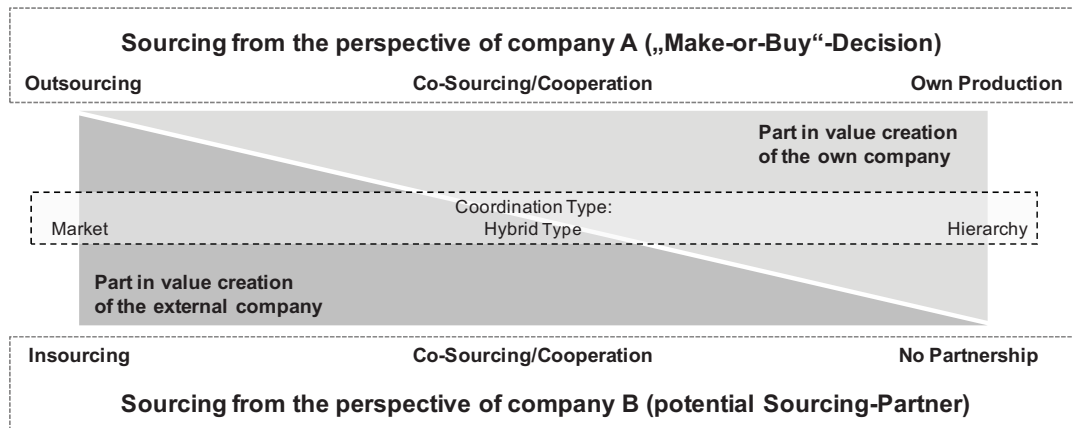
**FIGURE 3: DECONSTRUCTION OF THE VALUE CHAIN (HEUSKEL, 1999)**

### Systematisation of Sourcing Alternatives

It transpired that in the wake of deconstruction the linkages between the various value creation stages have weakened and that there is a distinct trend away from vertically integrated companies towards networks (cf. Figure 2). In networks, the value creation stages are occupied by those companies that are best for doing the job from an economic and a qualitative perspective.

On the path towards new value creation architectures, sourcing – in all its various forms – is a central tool (Achenbach/Moormann/Schober, 2004). As a generic term, *sourcing* covers all the different varieties of product and service procurement. *Outsourcing* refers to the utilization of external resources for fulfilling in-house functions and *insourcing* is where a company provides products or services for external third parties. Further sub areas are *co-sourcing*, where the product or service is jointly provided in cooperation between employees of the outsourcing company and external resources. There is also the (classic) *own production* (Recker/Jahn/Jarke, 2003). *Own production*, *co-sourcing* (also known as *cooperation*) and *outsourcing* are all various ways of procuring a product or service for a company’s own use. On the other hand, *insourcing* involves a company producing goods or services in-house but for other companies. These three options for procuring products or services for a company’s own use are classic courses of action when it comes to a “make or buy” decision.

The four above named types of sourcing can be differentiated according to their coordination and charted on a scale of different coordination types ranging between *hierarchy* (where the coordination instrument is the issuing of directives) to *market* (where the coordination instrument is the price) (Schober, 2004). Figure 4 illustrates this:



**FIGURE 4: OVERVIEW OF DIFFERENT TYPES OF SOURCING (AUTHOR'S OWN ILLUSTRATION)**

In the case of outsourcing, a product or service is bought in from the market by an insourcer at an arranged price. If the product or service stems from within the company itself, the process is coordinated by directives being issued. Co-sourcing lies in between these two extremes of outsourcing and own production because control over a particular value chain stage is not completely relinquished (Recker/Jahn/Jarke, 2003). In-between these various forms of sourcing there are other possibilities which change the form of cooperation. For instance, between outsourcing and cooperation, there might be long-term delivery/supply contracts (Picot, 1991). Outsourcing and cooperation require a respective partner company, whereas own production does not.

This compact overview of the main sourcing alternatives is intended to show what is meant when we speak of “sourcing decisions”. These decisions handle the question of which sourcing form is meaningful for a particular part of a company's value creation, whereby such decisions (may) change the company's value chain. In order to avoid errors being made during the decision making process, it is necessary to first identify the individual (relevant) processes and to assess their share of value creation for a company. On the basis of such information, potentials can be sketched out for deconstructing and re-forming the value chains.

Regarding the question of which sourcing alternative is the most suitable, it is necessary to have detailed knowledge of the main processes involved in the value creation of a company, and how they interrelate. In a decision situation, a tool is required which helps to clarify a company's own sourcing position in the main sub areas of value creation, to recognise linkages and to visualize the company strategy as a whole, thus leading to sound decision making. A basis of this kind also enables benchmarking in order to recognize – and potentially question - differences between a company's strategic positioning and that of its competitors. Such a tool is the Source Board, which we shall introduce in the following. It has been derived from the findings on the understanding of value creation and on the significance of sourcing decisions. To facilitate an understanding of this tool, we use a concrete case study from the financing industry.

### 3. CASE STUDY – VALUE CREATION IN A BANK

In our case study, we depict the sourcing strategy of a full-service bank for business activities in consumer banking. Our objective is to show the main activities involved in value creation and to provide an overview of the current (in some cases very different and therefore non-transparent) positioning in “make or buy” decisions. On the basis of these activities, a complete overview as well as a comparison with competitors, is compiled. This is done in three steps:

Step one: First of all we identify areas of value creation and their linkages. We do this by applying and adapting Porter's Value chain. Although this information is still too abstract or rather strategic for operative implementation, it does provide a basis for further, more detailed, deliberations.

Step two: These more detailed deliberations serve to identify processes and to provide a dynamic understanding of their interplay. The value chain is extended by a detailed (core) process level.

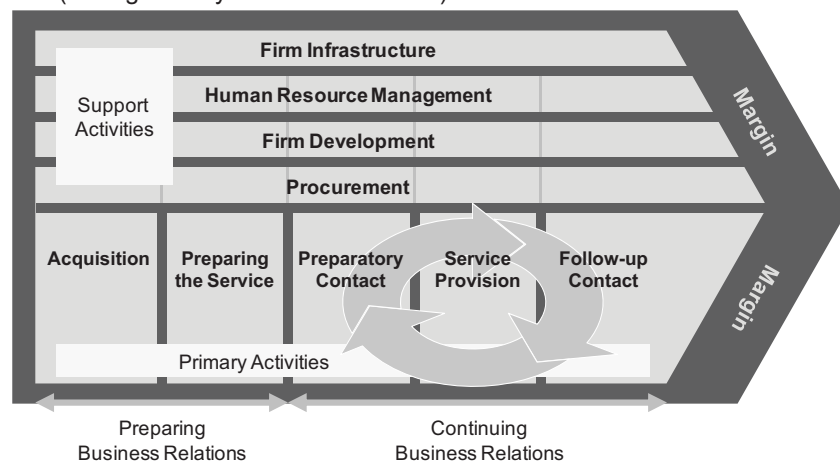
Step three: In order to determine the company's own positioning in a value network, its selected strategies are compiled in a Source Board to provide an overview and enable benchmarking.



### Further Developing and Transferring of the Value Chain onto Banks

Whereas PORTER focused his development of a value chain model on producing companies, the transferring of the value creation model onto service companies in general, and banks in particular, means that there are peculiarities to be observed. Correspondingly, the model must be adapted in order for it to be applied to such companies. The differences in the structure of the value chain result mainly from the special features of those services which themselves are of a “process” character, since the process itself of producing a service is actually the “service” (Stauss/Bruhn, 2007). Other constitutive features are the “integration of the external factor” (customer), the “intangibility” of the service and the large “degree of individualization” (Meffert/Bruhn, 2006 and Maleri, 1991). One consequence is the “uno-actu principle”, i.e. direct contact between producer and consumer of a service (Altobelli/Bouncken, 1998).

The integration of an external factor results from the customer – or his respective object - being present during the service provision. The customer is thus integrated into the service process and impacts on its path and on its result. The customer may incorporate his own preferences, which leads to a certain degree of individuality. The necessary modifications of the value chain for service companies can be derived from the before mentioned special features of service provision. For instance, the activities *marketing and sales*, which are located in PORTER’s value chain behind *logistics and operations*, are now positioned in front, because without customers being present, no “production” of a service can be initiated. The actual provision of the service to the customer has to be located in one of the corresponding *operations* categories, whilst *outbound logistics* can be largely ignored since there is a lack of storability and transportability (Altobelli/Bouncken, 1998). SPIEGEL developed a value chain model for service providers who have longer relationships with customers entailing ongoing service provision (as is generally the case for banks).



**FIGURE 5: VALUE CHAIN FOR SERVICE PROVIDERS (ACCORDING TO SPIEGEL, 2003)**

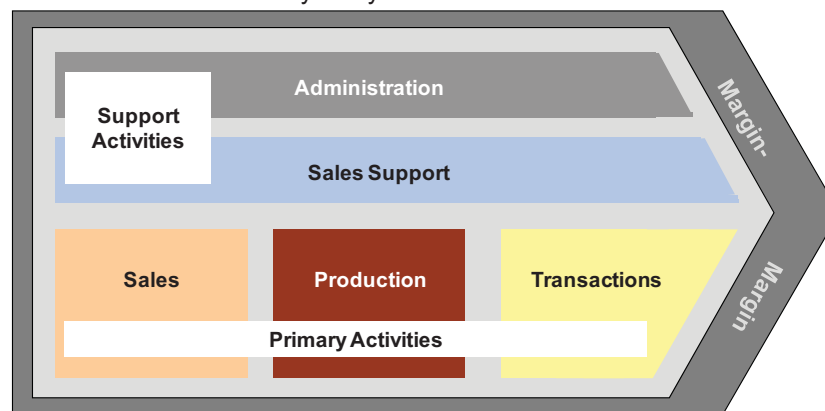
As Figure 5 shows, the above mentioned differences have been taken into consideration in this model in the area of *primary activities*. Modifications have been made so that there are now two phases: *preparing business* and *continuing business relations*. The value chain starts with *acquisition*, which corresponds to the concept of “customer pull” for services. This activity covers all those processes which are related to customer acquisition and which are implemented via “marketing mix” activities. The objective is to create a long-term contractual relationship. *Preparing the service* is intended to ensure that the service can be provided to a customer over the whole length of the contract. It incorporates in particular preparatory measures such as training courses or installing the necessary infrastructure. These activities should only be implemented once per customer or at very big intervals (Spiegel, 2003).

The phase of the *continuing business relations* begins with the *preparatory contact* phase, while those measures are implemented which follow on from talks with the customer. These are in particular the temporal and organizational integration of the service at the customer’s. Following these preparatory phases, the activity *service provision* takes place. In the *follow-up contact* phase, a final exchange of information takes place between customer and provider in order to improve the service if necessary. This phase may be seen as one of quality or complaint management. Together, the last three activities form a cycle which is followed through several times in the course of the contractual relationship and which continually improves the process of service provision (Benkenstein/Steiner/Spiegel, 2007).

Differences in the supporting activities are not so much differences in the way activities are divided up but more in their weighting and importance. *Procuring* entails principally the provision of input goods and human resources, whereby the procuring can often only take place after an order has been placed. In contrast with PORTER's original value chain, *technology development*, which SPIEGEL refers to as *firm development* since machines or facilities rarely need to be developed, carries little weight. Particularly with financial service providers, the focus is on I & C technologies. On the other hand, *firm infrastructure* carries much more weight, because administrative activities are more intense (Benkenstein/Steiner/Spiegel, 2007). This is also true for *human resource management*, because human capital is usually the key resource of service provider firms (Benölken/Greipel, 1990).

As banks are a very special type of service provider, it is necessary to modify and adapt the value chain even more to the special features and processes in order to be able to implement a detailed analysis of the value creation stages involved. In the literature there exist various studies on the value chains of banks, e.g. that of Lamarque 1999 or Scheffer 2007. With regard to the necessary process orientation in the second stage, the models of Lammers/Löhndorf/Weitzel 2004, Petry/Rohn 2005 and Falkenberg/Müller/Bönsch 2006 would appear to be very suitable bases for creating a new model for consumer banking, and we thus use these as a foundation for our own deliberations.

As a basis for examining the value creating activities in the consumer banking sector we created a modified model for the case study. It is based on the before mentioned value chain models and is supplemented by the dynamic understanding of value creation in financial institutions, as described in Section 3.2. Figure 6 shows the modified value chain and emphasizes the distinctions between *primary* and *support activities*. For the sake of clarity and the later application of the model, the number of activities has been limited to include only 5 key areas of value creation.

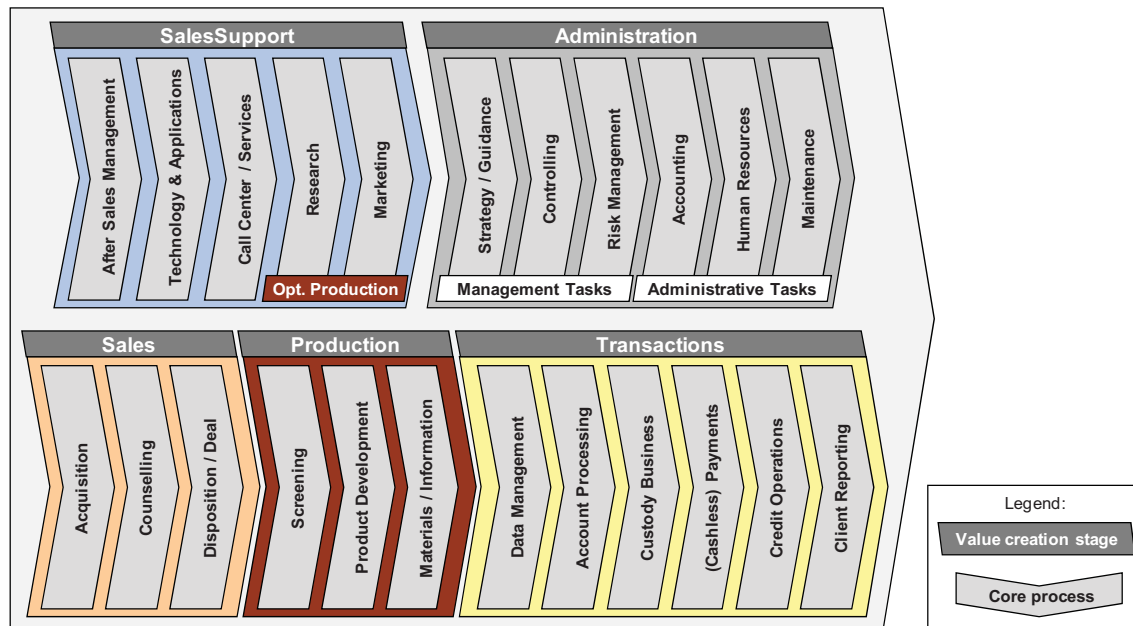


**FIGURE 6: VALUE CHAIN FOR THE CONSUMER BANKING SECTOR (AUTHOR'S OWN ILLUSTRATION)**

The primary activities consist of the elements *sales*, *production* and *transactions*. *Marketing* has a special strategic position, because on the one hand there are banks where marketing is a central part of production and product development and on the other hand there are banks where marketing is, for example, integrated in *sales support* and has a corresponding supportive function. The *support activities* can be broken down into *administration* and *sales support*. The respective core processes within the 5 value creation stage of the modified model of a value chain specifically for the consumer banking sector are shown in Figure 7. The 5 value creation stages will be specified later in this context.

#### **Observation and Analysis of the Processes in Banks**

It would seem necessary to provide further details about core processes, since a meaningful sourcing decision cannot usually be made at the value creation-stage level owing to the many different processes involved. For example, if we look at the value creation stage "sales support", this subsumes core processes such as customer management and technology/IT. These are, of course, processes which support marketing and sales activities but they are so different from each other and can be carried out by other co-workers or in different locations. Consequently, it would be feasible for one process to be outsourced to an external service provide whilst the other one stays in the company. As the core processes shown in figure 7 are mostly self-explanatory, a more detailed description of them is not given here. If more detailed information is needed, see Falkenberg/Müller/Bönsch 2006.



**FIGURE 7: GENERIC BANK VALUE CHAIN WITH CORE PROCESSES FOR THE CONSUMER BANKING SECTOR (ACCORDING TO FALKENBERG/MÜLLER/BÖNSCH, 2006)**

Depending on the degree of integration, sourcing activities may be considered if a clearly defined area is identifiable. Otherwise, a core process is difficult to source because, for instance, different employees are each responsible for a specific share of marketing activities which have a high degree of connectivity in their processes. Supporting activities are divided into *sales support* and *administration*. Administration is itself divided up into *management tasks* and *administrative tasks*. With regard to sourcing activities, this differentiation is necessary because core tasks of a management (in contrast with general administrative activities) are – on account of existing legal restrictions, not sourceable (Falkenberg/Müller/Bönsch, 2006 and Schüller/Simon, 2008).

As previously mentioned, several variations of bank value chains exist and it is of course debatable which form is the optimal one. This depends however on the individual case and banking institution involved. For this particular case study, the selected value chain seemed most suitable because its modular structure enables it to be adapted to specific institutes and to illustrate their differences and specific features, as is required for benchmarking at a later stage. Its detailed view of the core processes is also an advantage with regard to its later application, because the processes to be analyzed are standardized and fixed. As previously mentioned, both of the value chains shown in Figures 6 and 7 demonstrate clearly the various value creation stages and core processes, and will be used as a basis for further observations.

However, this static form of representation does not totally do justice to the real-life process – as SPIEGEL's model has already demonstrated. In reality, the three primary value creation activities *sales*, *production* and *sales support* in addition to the supporting processes of the value chain are not sequential or chronological and independent from each other. It is much more the case that they interact, i.e. their development impacts on the continuation of other processes and also overlaps temporally. (*Risk*) *control* and *management* accompany the whole process of value creation and thus impact on every activity. The individual value creation stages are linked together via a continuous *flow of information and materials*. Figure 8 depicts the dynamic understanding of the interaction and the inter-linkage of the individual value creation areas.

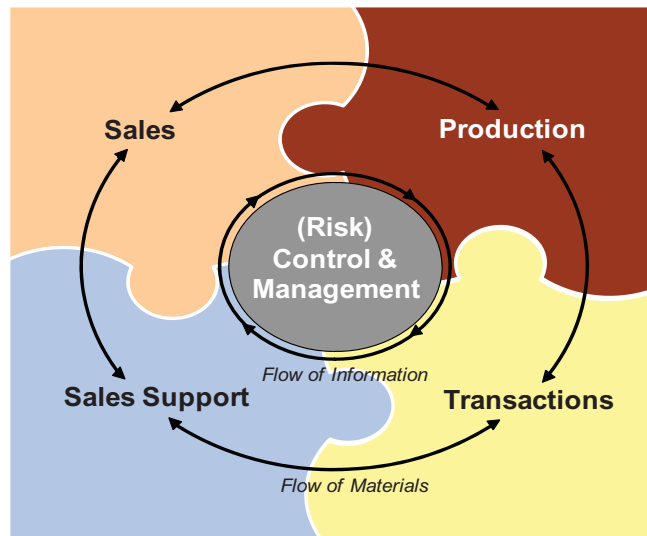


FIGURE 8: DYNAMIC UNDERSTANDING OF THE GENERIC VALUE CREATION MODEL  
(AUTHOR'S OWN ILLUSTRATION)

#### Source Board – Analysis and Visualization of Strategic Sourcing Positioning

Now that the concept of the value chain has been introduced and transposed onto banks, and we have shown how value chains change during deconstruction, and the possibilities of different sourcing strategies for positioning a company competitively, we shall finally observe how the “Source Board” operates for the value creation of banks.

A fundamental and detailed understanding of the working processes and their interlinkages in value creation should be the basis of any sourcing decisions. Dependencies and interactions can, however, only be sufficiently taken into consideration if the total positioning of an institute is known, because only then can sourcing activities be coordinated and viewed from a cross-process perspective. Additionally, only an “as is” analysis of this kind can enable a comparison with competitors in order to critically examine a company’s own strategy and to facilitate benchmarking. In the following, the Source Board – which has been developed specifically for these purposes, serves as a model for an “inventory” and as a basis for controlled measures for changing a bank’s sourcing strategy.

The Source Board is divided into two columns. On the left side, we have the breadth of service offer. This is horizontally divided into two subcategories of “range of services” and “service types”. These subcategories are vertically divided up according to the 5 value creation stages and their (up to 23, depending on the individual financial institution) core processes, which are shown in the value chain model of Figure 7. These are illustrated in more detail in the subcategory “service types” although they differ from bank to bank. This has a very small negative impact on comparability but also enables a very specific application.

The right-hand column includes the degree of vertical integration and shows the choice of sourcing varieties for the observed types of performance. The sourcing varieties correspond to the terminology introduced in section 2.3: *Insourcing (in)*, *self-made (sm)*, *cooperation or co-sourcing (co)* and *outsourcing (out)*. Both of the last two varieties are additionally split down into *internal (int)* and *external (ext)*. This is particularly meaningful in the banking industry because many institutes have established their own service companies, managing, for example, certified payment processes. However, as they are 100 % subsidiaries of the banks, they cannot be seen as economically autonomous. They serve to reduce costs, e.g. by avoiding labour agreements, rather than being a strategic outsourcing decision. In cases of *outsourcing*, the Source Board provides additional information about the number of selected partners and whether *single (sg)* or *selective (sl)* sourcing is implemented, and about spatial proximity, i.e. whether it is a *local (loc)*, *nearshore (ns)* or *global (glo)* partner.

Figure 9 provides an example of a Source Board for a full-service bank.

Depiction of the Sourcing Strategy of a sample bank in the consumer banking sector									
Broadness of Service Offer			Degree of vertical integration						
	Range of Services	Service Types	in	sm	co		out		
					int / ext		int / ext	sg / sl	loc / ns / glo
Sales	Acquisition	Investment Counselling	•	•					
		Internetbanking					•	•	•
	Counselling	Affiliate Business	•				•	•	•
		Field Business		•			•	•	•
Production	Disposition / Deal	Financial Planning					•	•	•
		Estate Business							
	Product Development (Service Activities)	Retail Investment Products		•	•				
		Loan Products		•	•				
Support	Materials / Information	Saving Products			•				
		Asset Management		•			•	•	•
	Screening	Structured Products		•					
		Real Estate		•			•	•	•
Transactions	Research	Retirement Provisions			•				
		Insurances					•	•	•
	Marketing	Debit & Credit Card Business					•	•	•
		Alternative Assets					•	•	•
		Building Savings Products					•	•	•
	(Cashless) Payments	Credit Card Payments	•	•			•	•	•
		Document based	•	•			•	•	•
	Account Processing	Electronic / Paperless	•	•	•		•	•	•
		Europe	•	•			•	•	•
		Global					•	•	•
	Credit Operations	Contract Management		•					
		Pricing		•					
		Rating		•					
	Custody Business	Investment Management					•	•	•
		Execution/Trading					•	•	•
		Fund Management					•	•	•
		Custodian					•	•	•
	Data Management	Data Administration		•					
	Client Reporting	Client Reporting		•					
Sales Support	After Sales Management	Family Business		•					
		E-Banking			•				
	Call Center / Services	Functional Cheking					•	•	•
		Machine Care					•	•	•
		Call Center		•					
	Technology & Applications	Core Bank Applications		•	•				
		Data-Warehouse			•				
		Server/Clients/Networks			•		•	•	•
		Computing Center					•	•	•
		IT Work Stations					•	•	•
		Self Service Systems					•	•	•
		System /Software Solutions					•	•	•
Administration	Strategy / Guidance	Guidance/Management		•					
	Controlling	Risk-Controlling		•					
		Risk-Regulation		•			•	•	•
	Risk Management	Treasury		•					
		Audit & Bank Examination		•					
		Finance Management					•	•	•
	Accounting	Postings & Reporting		•					
	Human Ressources	Personnel Recruiting		•					
		Personnel Development			•				
		Promotion of Talents					•	•	•
	Maintenance	Vehicle Fleet Management					•	•	•
		Innovation Management		•					

FIGURE 9: EXAMPLE OF A SOURCE BOARD (AUTHOR'S OWN ILLUSTRATION)

The Source Board in Figure 9 makes no claim to completeness in every detail. Rather, the analysis is limited to core aspects of those business activities which are significant for the value creating provi-

sion of service. For each of the 5 vertical levels, it elaborates the key sourcing combinations, and this indicates an overall sourcing strategy for the bank.

By comparing this Source Board information with that of other institutes, different strategies and competitive positioning become apparent. Additionally, a systematic data collection, such as is necessary for creating a Source Board, is provided by a table, which cites the service program, types of services and the service provider. The overview also shows the relations that each sourcing partner maintains with the bank, and provides sources which give more detailed information. The Source Board, then, delivers a strategic overview on which a clear strategy can be built and depicted. The detailed table enables the operative execution and adaptation of such strategies. A section of such a table for a bank's core process *sales* is given in Figure 10.

Range of Services	Service Type	Service Provider	Relation	Reference
<b>Acquisition</b>	Investment Counselling	In-house	Internal	Annual Report
	Internet Banking	Independent Bank	Minority Stake	Participation Agreement
	Affiliate Business	Own Service Firm	Associated Company	Removal Agreement
	Field Business	Own Service Firm	Majority Stake	Participation Agreement
	Financial Planning	In-house	Internal	Annual Report
	Estate Business	Independent Bank	Majority Stake	Participation Agreement

**FIGURE 10: EXAMPLE OF AN OVERVIEW TABLE FOR DERIVING A SOURCE BOARD  
(AUTHOR'S OWN ILLUSTRATION)**

#### 4. CONCLUSIONS AND PROSPECTS

Building on the concept of “deconstruction”, we have shown that currently there is a development away from fully integrated companies (e.g. full-service banks) towards a specialized provision of services. Value chains are being decomposed and re-positioned, creating new organizational structures. Consequently, companies are forced to match themselves against their competitors. In the areas which are identified as profitable, leverage is possible, whereas the less profitable areas have to be repositioned in the sourcing process. Sourcing decisions are becoming increasingly relevant; they include every conceivable method of procuring products and services. Instead of a complete own-production, co-sourcing can take place, i.e. cooperation with other companies, full outsourcing of processes or insourcing with other successful processes. There is a wide range of potential sourcing possibilities. A Source Board can be implemented as an analytical tool for forming or visualizing a company's own sourcing strategy and for positioning a company vis a vis its competitors. Implementing a detailed assessment of a strategy overview enables an important understanding of a company's internal processes and knowledge. Such an understanding is vital for undertaking sourcing decisions. Financial institutes also attempt to limit the complexity of their business operations by focussing on specific areas of their value creation activities and business areas and concentrating on their own strengths (Flesch, 2005 and Speek, 2008). Consequently, smaller branches have the chance to be competitive although they cannot, for instance, achieve either the know-how status or the business volume of larger branches in order to be able to develop all of the services and products themselves that their customers demand. But they can profit by, e.g. allowing other specialists to develop their products for them whilst themselves only concentrating on regional sales.

This means that as a result the vertical integration of value creation will become less on account of further developments of value creating architectures. Even today, in certain areas of a bank's value creation, new value creating architectures which are adapting to changed competitive conditions, are become visible. Not least, on account of the considerable regulatory demands made on banks, the financial industry will in the next few years witness increasing movement in their sourcing activities.



Something that the British naturalist, Charles Darwin, said describes this situation very well: "It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is the most adaptable to change".

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# WHEN SPORTS STARS GO OFF THE RAILS: HOW GENDER AND INVOLVEMENT INFLUENCE THE NEGATIVE PUBLICITY OF SPORT ENDORSERS

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## ABSTRACT

*This paper examines the impact of negative publicity associated with a sport endorser. It investigates how consumers' gender and level of involvement in sport impacts on their perception of trust in the sports endorser, and the flow on association to attitudes and purchase intentions of the product. Results suggest that negative publicity significantly influences the perception of trust of a sports endorser, with an equally negative impact on attitudes and purchase intentions towards the product or brand. In particular, female consumers and consumers more highly involved in sport were significantly more influenced by negative publicity relating to a sport endorser. Implications and further research are discussed.*

**Keywords:** celebrity endorsement, gender, negative publicity, involvement, advertising

## 1. INTRODUCTION

The use of celebrities as endorsers appears to be ubiquitous in advertising. However, whilst celebrities such as sports stars can bring desired attention to a product in a cluttered marketplace (Erogan, Baker & Tagg, 2007), and can, by association, imbue a product or brand with attractive qualities, their use is not without risk. Highly publicised negative behavior of sports stars can have a detrimental effect on the brand or product they endorse. Credibility can decline and bring with it a corresponding decline in the worth of the endorsed brand. This may particularly be the case for female consumers, given their focus on the source agent, as well as their higher level of message and communication elaboration (Putrevu, 2001)

The goal of this paper is to assess the impact of credibility, specifically trustworthiness, as a key feature in the make-up of a celebrity sports endorser, and to identify whether gender differences may be evident in how consumers react to a celebrity sports endorser. To achieve this we will extend current thinking on celebrity endorsers to incorporate both product match-up (Kamins, 1990), sport involvement, and differential information processing strategies based on gender (Edwards & La Ferle, 2009). In addition, we will situate the study by using a 'real life' comparison with current celebrity endorsers, focussing on the highly publicised fall from grace of Tiger Woods and the way this negative publicity influences consumer perceptions.

Such findings may be vital in an organization's decision about whether to use celebrity sports endorsers, and to highlight the strength of the association effect that may occur if an endorser 'goes off the rails'.

## 2. LITERATURE REVIEW

### 2.1 The Celebrity Sport Endorser – Pinch Hitter or Loose Cannon?

Employing celebrities such as sports stars or actors as endorsers is an increasingly common approach in advertising. For example, Koernig and Boyd (2009) suggest that a quarter of advertisements feature celebrities. Chan (2008) claims that, in China, 40% of youth-product advertisements feature at least one celebrity. The use of celebrity endorsers is presumed to help the advertisement 'cut through' the clutter of advertising messages that consumers are bombarded with each day (Erogan, Baker & Tagg, 2007). Celebrities have stopping power (Belch & Belch, 2001). They can help attract consumer's attention and thereby increase brand recognition.

Advertisers view sports stars and athletes as particularly attractive to employ as endorsers. Stone, Joseph and Jones (2003) propose that athletes have an aspirational attraction for the potential market, particularly the youth market (Comstock & Paik, 1991). Heroes and celebrities have strong identification value for particular market segments (Cialdini, 1993). In the early 1990's Gatorade exploited this association very effectively, extolling young children to "Be Like Mike" by drinking the

sports drink that NBA star Michael Jordan endorsed. Likewise, advertisers are attracted to the attributes of the sports star (such as power, success, drive, mental discipline and athleticism) that they hope to be transferred to their brand or product through repeated association (Ericsson & Hakansson, 2005). The iconic pop culture status of some sport endorser campaigns (i.e., Nike's "Just Do It" campaign originally based around Bo Jackson, John McEnroe and then later around Michael Jordan) highlight the power of association between the sports star and the product. Using sports stars as endorsers can clearly be a highly effective advertising strategy.

However, there is also a potential downside to the use of celebrity sports endorsers – whilst their profile brings attention, it also results in them being a high risk endorsement strategy. Typically a high cost endorsement option, celebrity sports endorsers may actually be ineffective in a number of circumstances. For example, the type of product the sports star is endorsing is critical (Kamins, 1990). If there is not a logical match between them and the product or brand in question, then consumers struggle to see an association. For example, Cristiano Ronaldo may be an excellent endorser of football boots, but may not be as effective in endorsing computers. Koernig and Boyd (2009) found that athletes (both anonymous and celebrity stars) were more effective as endorsers if there was a logical fit with the product. Likewise, the effectiveness of a celebrity sports endorser may be diminished if they are seen as promoting or endorsing too many products (Agrawal & Kamakura, 1995). Put simply, the more products they endorse, the lower the public perceives the integrity and credibility of the celebrity (Mowen & Brown, 1981).

Potentially of most concern for advertisers, however, is that celebrity sports stars may be seen as loose cannons – with their behavior heavily scrutinised by the media and the source of potential embarrassment for the company or brand they are associated with. Recently there have been numerous cases of undesirable behavior (either off-field or on-field) by famous athletes or sports stars, tarnishing their image and impacting on how they are viewed by the public. Marital infidelity, sex scandals, illegal performance-enhancing or recreational drug use by high profile athletes gains significant negative publicity. This is not the sort of association any advertiser wants with their brand or product (Louie & Obermiller, 2002).

In order to be successful celebrity sports endorsers must have two features. Firstly, they must be at the top level in their respective sport. In other words, they must be a champion – a winner. In addition, they must be able to project a likable and trustworthy image to potential consumers (Stone et al, 2003). No matter how successful the celebrity sport star is in their chosen sport, without the ability to connect with a potential consumer market – i.e., being likable and trustworthy – their potential as an endorser is limited. Former world heavyweight champion boxer Mike Tyson is an obvious example. Undoubtedly one of the most successful boxers of all time, his worth as an endorser was severely limited by a string of embarrassing and potentially harmful actions, both in and out of the ring. Allegations of rape, as well as the infamous ear-biting incident during his title fight with Evander Holyfield, made him a potential liability as an endorser and someone with whom most advertisers would not want their brands or products associated.

However, sports stars appear to resonate with specific audiences and populations. Fans of sports stars, teams, or indeed sport in general may perceive the negative behavior of sports stars with more leniency than other consumers. Funk and Pritchard (2006) found evidence that negative publicity about a sports star is more likely to be discounted or given less weight by fans of sports teams. Likewise Lake, Reece and Rifon, (2010) found that fans commitment to both the individual sports star, as well as the team they played for, significantly moderated the effect of negative information or publicity about the sport star.

The positions outlined in this section of the paper lead to the first hypotheses of the paper:

H1: Consistent with the match-up hypothesis, there will be more positive attitudes to the product and purchase intentions for a sport-related product endorsed by a celebrity sports endorser compared to a non-sports-related product.

H2: Consumers will record less positive attitudes to the product and lower purchase intentions when it is endorsed by a sports star with strong negative publicity than when endorsed by a sports star with no negative publicity.

H2a: The effect of negative publicity on attitudes and purchase intentions will be significantly moderated by high levels of sport involvement.

## **2.2 Gender Differences in Perceptions of Sport Endorsers**

Whilst there is some suggestion that female consumers view celebrity endorsers positively (Lake, et al., 2010), there is also compelling evidence that a celebrity sports endorser's negative behavior may be particularly salient for female consumers. The Selectivity Hypothesis (Putrevu, 2001) is based on the notion that differences exist in how males and females process and therefore interpret information. Women have been found to be more elaborate in their processing of information, such as messages and advertisements. They engage in more detailed consideration of this information and what it may imply about the source. In contrast men tend to be heuristic processors of information and focus more on the overall theme of the communication, rather than focussing on what that information may imply about the sender. In other words, when faced with media speculation about a sport star who has behaved poorly, women are more likely to engage in a more detailed and personal critique of that endorser. Entwistle and Garvey (1972) suggest that women's interpretation of information cues is more imaginative, with a higher creative interpretation of information cues. If this is the case, we may expect greater creative associations to be made between the sports star endorsing a brand or product, their behavior and ultimately the brand or product itself.

Evidence has also been found that women are more likely to focus on, or at least consider, information from a range of external sources, particularly what Edwards and La Ferle (2009, p. 26) refer to as 'social agents'. These social agents include the endorsers of the product. In contrast men, consistent with being heuristic processors, tend to focus more on information that is directly related to their own concerns and goals, resulting in a greater focus on the message itself. As an example, a woman may see an advertisement for a sports drink that is endorsed by a prominent basketball player. If that basketball player had behaved inappropriately in some way, and this was featured in the media and popular press, the greater creative and detailed interpretation of message cues may lead to the women considering the brand negatively. This would be due to the association between the brand and endorser, based on the information she has received about the sports star for the source agents (in this case, various media channels). In contrast, men may see the same negative publicity about the sports star in the press and yet be more focussed on the product itself and whether it does what they want it to do (for example, does the purchase of a quality razor result in a smooth shave) rather than any media speculation about the potentially questionable behavior of the sports star who is endorsing that product.

Therefore, in this context we would anticipate men would be less influenced by publicity relating to negative behavior of a sports endorser. Their tendency to engage in more heuristic processing of information, combined with a focus on core information relating to self-relevant concerns, means that men would attend more directly to the product or brand, rather than associations with the endorser.

## **2.3 The Current Study**

The current study seeks to affirm previous literature in the area (i.e., Koernig & Boyd, 2009) by assessing celebrity sports stars effectiveness as endorsers of sports-related products. It also seeks to identify whether the consumers' level of involvement in sport in general moderates the impact of the negative behavior of sports endorsers.

Based upon the rationale presented to date in this paper, we would expect women to record more negative perceptions about a celebrity sports endorser who has behaved poorly. From a consumer perspective, we would expect women, compared to men, to record lower ratings of trustworthiness for such an endorser. This leads to the third hypothesis of the study:

H3: Women, compared to men, will record lower ratings of source credibility (particularly trustworthiness) for a celebrity sports endorser linked with negative publicity.

Likewise, we would anticipate that such negative perceptions will impact on consumer's attitudes towards the product/brand and purchase intentions. As women are predicted to be more likely to make associations between the endorser and the product, we would expect less positive attitudes and lower likelihood to purchase compared to male consumers. As per H2, we would expect higher involvement in sport to significantly moderate this effect. This leads to the fourth hypothesis of the study



H4: Women will record less positive attitudes and lower intentions to purchase when presented with an endorser linked with negative personal information.

H4a: The effect of gender on negative publicity on attitudes and purchase intentions will be significantly moderated by high levels of sport involvement.

### 3. METHOD

#### 3.1 Participants

374 students from a university in a major Australian city, aged 18 to 39 ( $M = 22.7$  years of age,  $SD = 3.23$ ) comprised the sample for the study. 228 females (61%) and 146 males (39%) completed the study. All students were undertaking courses in Sport and Recreation Management. This was considered important to improve familiarity with the endorser, both for male and female respondents, as actual sports stars were employed as the endorsers in the study design.

#### 3.2. Measures

*Source Credibility Scale.* The perceived credibility of the sports endorser was measured using the Source Credibility Scale (Ohanian, 1990). Comprising 15 items, it consists of three sub-scales (expertise, attractiveness and trustworthiness) each of which contains 5 items. The scale has demonstrated high levels of reliability and validity in use with celebrity endorsers (Ohanian, 1991).

*Familiarity.* To verify that respondents were equally familiar with the sports stars chosen as the endorsers for the study, respondents were asked to rate how familiar they were with the sports star on a scale from 1 (*Completely unfamiliar*) to 7 (*Very familiar*).

*Attitudes towards the product.* Attitudes towards the product were measured using Till and Busler's (2000) product attitude scale. Three seven-point semantic differential measures were employed and anchored with: *strongly like/strongly dislike*, *favourable/unfavourable* and *negative/positive*. Demonstrating good internal reliability (Cronbach's  $\alpha = 0.90$ ), a single item to measure the overall attitude of the respondent was created from a mean of the three measures.

*Purchase intentions.* As per Murray and Price (2010), two items measured purchase intent, with respondents asked how likely they would be to try the product (Peak GL-7 Sports Drink or Gannon Mobile Phones) as well as their intention to purchase the product. As per Ohanian (1991), both items were measured on a seven-point scale from 1 (*extremely unlikely*) to 7 (*extremely likely*).

*Sport Involvement Inventory.* Respondents were also asked to complete Shank and Beasley's (1998) Sport Involvement Inventory, a semantic differential scale designed to measure the level of involvement a person has with sport in general. Comprising 8 items, the scale assesses both affective and cognitive elements of involvement and has demonstrated good reliability (Shank & Beasley, 1998).

#### 3.3. Procedure

Participants were provided with a scenario package containing the scales as well as a picture of the sports star endorsing the product and an advertisement of the product itself. The celebrity sports stars employed in the study were Roger Federer (tennis) and Tiger Woods (golf). Actual sports stars were employed to ensure ecological validity of the study (Sbordone, 1998). Consistent with this approach, no explanation or outline was provided of the sports stars previous behaviors. Federer and Woods were deliberately matched as both were considered comparably 'attractive' and both at the time of the study were well recognised as being the best in the world in their chosen sports (expertise). However, the major difference between the two related to the perception of trustworthiness. Federer had an impeccable history in relation to his behavior on and off the field, with little if no negative behavior impacting on his reputation. Woods also had a similar reputation until the well-publicised breakdown of his marriage amid numerous allegations of infidelity, deception and dishonesty. This situation provided an opportunity to use real sports stars, one of which was embroiled in real negative publicity, rather than hypothetical scenarios to assess the potential impact on the attitudes and purchase intentions of consumers.

In order to assess the impact of whether product relevance to the endorser, or "match-up" (Kahle & Homer, 1985; Kamins 1990) was important, two product advertisements were developed. Both were for hypothetical products in order to minimize brand familiarity effects (Till & Busler, 2000). This was



particularly important for the current study to ensure no pre-existing associations between the well-known sports stars (Federer and Woods) and well-known brands (for example, the arrangement between Woods and Nike) could influence responses. The hypothetical products were developed via focus groups. Two products were selected as appropriate products that were either sport relevant ("Peak GL-7 Sports Drink") or non-sport relevant ("Gannon Mobile Phones"). These products were also selected as they would have the potential to be purchased by the general population, rather than by a specific limited interest market (for example, boxing gloves or figure skates). Golf and tennis products were not considered due to potential for compromising match-up results based on the sports participated in by the two sports stars.

Each package contained a cover page explaining the study and instructions on how to complete the questionnaire. It also contained the advertisement of the product (either Peak GL-7 or Gannon Mobile Phones), as well as a picture of the sports endorser (Federer or Woods), and the questionnaire itself. After participants had viewed the advertisement and picture of the sports endorser they were asked to complete the questionnaire.

## 4. RESULTS

### 4.1. Manipulation Checks.

Manipulation checks were conducted to assess that both sports stars were perceived as equally familiar by respondents, and that no gender differences existed in the perceived familiarity of the sports star. Overall respondents were very familiar with both Woods ( $M = 6.49$ ;  $SD = 1.02$ ) and Federer ( $M = 6.35$ ;  $SD = 1.35$ ), with no significant difference in familiarity between the sports stars observed. Likewise, when familiarity of the sports stars was examined by gender no significant difference was found ( $F = 1.65$ ,  $p = .20$ ,  $\eta^2 = .005$ ).

Comparability of the perceived physical attractiveness of both Federer and Woods was confirmed, with no significant difference in mean for attractiveness found between the two sports stars ( $M_{Federer} = 4.53$ ;  $SD = 1.35$ ,  $M_{Woods} = 4.36$ ;  $SD = 1.19$ ). Similarly as anticipated no significant difference in perceived expertise was found between Federer ( $M = 6.23$ ;  $SD = 0.89$ ) and Woods ( $M = 6.03$ ;  $SD = 1.05$ ).

### 4.2. Hypothesis 1.

As per Koernig and Boyd (2009), H1 proposed that consumers would record more positive attitudes and greater purchase intentions when the product 'matched' the endorser – in other words, when the sports endorser was endorsing a sport-related product.

General support was found for H1 (Table 1). Respondents recorded significantly more positive attitudes towards the sports-relevant product compared to the non-sport related product. However, although purchase intentions were higher for the sport-relevant product ( $M = 3.44$  compared to  $M = 3.17$ ), this difference was not statistically significant ( $p = .09$ ).

**TABLE 1. ATTITUDES AND PURCHASE INTENTIONS BY PRODUCT TYPE.**

	Attitude		Purchase Intentions	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Sport relevant product (Peak GL-7 sports drink)	4.36	1.14	3.44	1.67
Non-sport relevant product (Mobile phone)	3.83	1.12	3.17	1.40
<i>p</i>	<.001		.09	

#### 4.3. Hypotheses 2 and 2a

H2 proposed that negative publicity surrounding a sport star will impact on the attitudes and purchase intentions of consumers to the product being endorsed. A MANOVA was conducted with two dependent variables (attitudes and purchase intentions) and two independent variables (negative publicity for the sport endorser and level of sport involvement). Two sport involvement conditions were determined by splitting the respondents into high and low involvement conditions based on the mean for involvement (those recording above the mean were grouped into the high involvement condition and those below the mean in the low involvement condition).

**TABLE 2. ATTITUDES AND PURCHASE INTENTIONS BY SPORTS ENDORSER BY INVOLVEMENT**

	Attitude		Purchase Intentions	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Negative Publicity (Tiger Woods)	3.94	1.30	3.26	1.64
Low Involvement	3.97	1.28	3.60	1.64
High Involvement	3.93	1.31	3.17	1.64
No Negative Publicity (Roger Federer)	4.49	1.08	3.77	1.40
Low Involvement	3.83	1.11	2.77	1.42
High Involvement	4.65	1.02	4.02	1.33
	<i>p</i> - <.001		<i>p</i> - <.001	
	<i>Wilk's Λ</i>	<i>F</i>	<i>p</i>	$\eta^2$
Negative publicity of sport star	.985	2.136	0.145	0.01
Level of sport involvement	.981	4.30	0.049	0.018
Involvement X sport star	.952	4.54	0.034	0.021

H2 was supported, with customers recording less positive attitudes and purchase intentions when the product was endorsed by a sports star with negative publicity (Tiger Woods) compared to when it was endorsed by a sports star without negative publicity, (Roger Federer) (Table 2).

Hypothesis 2a proposed that the level of sport involvement of customers would moderate the effect of negative publicity on attitudes and purchase intentions of customers. The results confirmed H2a and found that although negative publicity of the sport star found to have a greater main effect on both attitudes and purchase intentions than sport involvement, sport involvement did significantly moderate the effect of negative publicity. However, it appeared to occur in the *opposite* direction to that anticipated. Customers with higher levels of involvement with sport were more positive in their perception of Roger Federer (no negative publicity), whereas they were less favourable in their assessment of Tiger Woods (negative publicity). Thus, H2 is supported, whilst H2a is not supported in the direction that was anticipated.

#### 4.4. Hypothesis 3.

H3 proposed that women, compared to men, would record lower ratings of trustworthiness for a sports endorser with high levels of negative publicity (in our study, Tiger Woods). The rationale was that given the more elaborate forms of information processing undertaken by women (Putrevu, 2001), specific negative information about the source agent would be more salient and attended to more closely.

General support for H3 was found, with females recording significantly lower levels of trust for Tiger Woods compared to Roger Federer (Table 3). However, a significant interaction effect was not found between gender and whether the sports endorser was linked to negative publicity (i.e., both men and women viewed Woods as less trustworthy than Federer).

**TABLE 3. PERCEPTION OF TRUSTWORTHINESS BY SPORTS ENDORSER BY GENDER**

	Trustworthiness			
	<i>M</i>	<i>SD</i>		
Negative Publicity (Tiger Woods)	2.47	1.36		
Male	3.11	1.57		
Female	2.18	1.15		
No Negative Publicity (Roger Federer)	5.60	1.11		
Male	5.96	1.23		
Female	5.43	1.02		
	<i>F</i>	<i>p</i>	$\eta^2$	
Gender	27.19	<.001	0.077	
Gender X sport star	1.92	0.167	0.006	

**4.5. Hypotheses 4 and 4a.**

Finally, H4 proposed that women would record less positive attitudes and less likelihood to purchase the product compared to men for a sports endorser with high levels of negative publicity (in our study, Tiger Woods). As per H2, it was also proposed that this effect would be significantly moderated by higher levels of involvement with sport (H4a).

**TABLE 4. ATTITUDES AND PURCHASE INTENTIONS FOR SPORTS ENDORSERS WITH NEGATIVE PUBLICITY BY GENDER BY INVOLVEMENT**

	Attitude		Purchase Intentions	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Female	3.50	1.02	2.64	1.38
Low Involvement	3.35	1.06	2.88	1.43
High Involvement	3.58	1.03	2.53	1.35
Male	4.47	1.10	3.95	1.37
Low Involvement	5.00	1.01	4.50	1.39
High Involvement	4.44	1.13	3.91	1.36
	<i>p</i> - <.001		<i>p</i> - <.001	
	<i>Wilk's <math>\Lambda</math></i>	<i>F</i>	<i>p</i>	$\eta^2$
Gender	.871	14.25	<.001	0.117
Level of sport involvement	.990	1.04	0.31	0.010
Involvement X gender	.984	1.40	0.239	0.013

H4 was supported, with females recording significantly less favourable attitudes and lower purchase intentions compared to men (Table 4). However, level of sport involvement did not significantly moderate the effect of gender on attitudes and purchase intentions (H4a was not supported).

**5. DISCUSSION**

This study sought to examine how negative publicity associated with an actual sport star may influence customers' attitudes and purchase intentions towards a product. It also sought to identify if this effect was more pronounced for women compared to men, based on their detailed and elaborate processing of information (Edwards & La Ferle, 2009; Putrevu, 2001). Finally, sport involvement was also examined as a potential moderator of negative publicity relating to sports endorsers.

The initial findings of the current study tended to support the extant literature, suggesting that celebrity sports endorsers are most effective when matched with sport relevant products. This is consistent with Koernig & Boyd (2009), who emphasised the need to effectively match celebrity sports stars to

products that closely align with their area of expertise. Likewise, the impact of negative publicity on the effectiveness of a celebrity sport endorser was also supported, with brand attitudes and purchase intentions significantly lower for customers presented with Tiger Woods as an endorser compared to those presented with Roger Federer. This finding highlights the potential high-risk strategy advertisers employ when selecting a celebrity sports star as an endorser. Whilst the celebrity status of the star cuts through the advertising clutter (Erogan, et al., 2007) it also leaves the brand at risk of negative perception by association. Findings of the study clearly show a less positive attitude and lower purchase intentions for products associated with a sports star with a tarnished image (Tiger Woods). Whilst advertisers may wish the positive attributes of the sports star to be transferred to, or associated with, their brand or product (Ericsson & Hakansson, 2005), the danger is the negative attributes of the star also seem to be transferred just as readily.

In addition the study sheds further light on gender differences in message perception in advertising. Women in the current study clearly recorded significantly more negative perceptions of trust in Woods as an endorser compared to Federer. This lack of trust was transferred strongly to the product, with women recording less positive attitudes to the product as well as significantly lower purchase intentions. Women are deeper, more complex processors of information compared to men (Entwhistle & Garvey, 1972; Putrevu, 2001). This results in greater consideration of the source agent as a connected unit with the product or brand. Thus, women make stronger, and more rapid, associations between brand and endorser. This was emphasised in the current study by the fact that whilst male respondents perceived Woods as equally untrustworthy as women respondents this didn't translate into their perception of the product. Both attitudes towards the product and purchase intentions were significantly *higher* for men who viewed the advertisement associated with Tiger Woods compared to women exposed to the same association.

Finally, general sport involvement was found to not significantly reduce the impact of negative publicity of a sport star. In fact, it was found to significantly *increase* the impact of negative publicity, with respondents who were highly involved in sport recording significantly less positive attitudes and reduced purchase intentions. This directly goes against the findings of Funk and Pritchard (2006), who found that sport commitment moderated the effect of negative information about sports stars. Such findings may be explained by salience and awareness of the publicity surrounding the sport star. Respondents highly involved in sport may have a greater 'suite' of information to draw from and therefore be more definitive in their assessment of the sport star.

### **5.1. Further Research.**

Although the findings of the study are generally supported more research needs to be conducted to further explore the implications of the findings. Expansion of the current study to include a greater variety of sports stars, and to include sports endorsers from a range of sports including sports teams that have more closely aligned loyalties and attachments among the general public, is vital. This also allows for a more considered investigation of commitment and involvement with sports teams and sports stars to be investigated. Secondly, the current study only examined gender differences in respondents' attitudes and purchase intentions based on their response to two male sports endorsers. No female sports stars were employed in the study. Replication of the study to include female sports stars that have experienced negative publicity (such as Serena Williams) would help to assess whether the effect of negative publicity on female respondents occurs irrespective of the gender of the endorser. Although Edwards and La Ferle (2009) did not find evidence that gender influenced the processing of negative information of celebrity endorsers, they did find evidence that respondents viewed endorsers of the same gender as more trustworthy. This may suggest that women would be more tolerant of negative publicity associated with a female sports endorser. Conversely, the notion of intra-gender competition (Buss, 1988; Murray & Price, 2010) may provide support for the idea that women demonstrate higher levels of mistrust for a woman who is associated with scandal or negative publicity. This potential theoretical dissonance needs further examination.

Celebrity sport stars can be a boom for advertisers. However findings of the current study support much of the existing literature that advertisers need to consider the sports star carefully and to match them effectively with the brand or product. They also need to be aware that female consumers may be far more influenced by negative publicity surrounding a sport star. Whilst female consumers may view celebrity endorsers positively (Lake, et al., 2010), the current study supports the evidence that negative behavior of a celebrity sports endorser may have a particularly strong impact on female consumers.

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# DO MANAGEMENT ACCOUNTANTS PLAY A DIFFERENT ROLE IN FAMILY FIRMS? EMPIRICAL EVIDENCE ON MANAGEMENT ACCOUNTANTS' QUALIFICATIONS AND ROLES IN FAMILY AND NON-FAMILY FIRMS

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## ABSTRACT

*This study investigates whether management accountants in family firms differ from their counterparts in non-family firms concerning the required qualifications and roles performed within the organization. Drawing on the resource-based view of the firm theory, we hypothesize that management accountants in family firms perform more traditional roles and rely more on soft skills compared to management accountants in non-family firms. We test our hypotheses using survey results from large firms from Austria. Utilizing bivariate statistical analyses, we did not find support for the hypothesized relationships. We thus conclude that the role of management accountants does not differ significantly in large family and non-family firms, which can be attributed to family firms losing their specific resources with growing size. We conclude with the implications of these findings and avenues for further research.*

**Key words:** Family firms, Management accounting, Management accountants, Skills, Roles, Austria

## 1. INTRODUCTION

Family firms show distinct characteristics concerning their governance mechanisms and structure compared to non-family firms (Bartholomeusz and Tanewski, 2006; Giovannini, 2010). The main distinguishing feature of family firms is the integration of a controlling family in the business's management, directorship, or ownership (Gersick *et al.*, 1997). Family members may play multiple roles in family firms as managers, directors, or owners, and business and family affairs may be intermingled (Haynes *et al.*, 1999). The intermingling of family and business as well as role ambiguities often creates a challenging environment for professional, non-family managers employed in the family firm (Klein and Bell, 2007). Non-family managers usually react to these challenges by trying to professionalize and formalize the family firm (Stewart and Hitt, forthcoming). In this regard, it has been found that the employment of non-family managers leads to increased usage of formalized planning and management accounting instruments (Duller *et al.*, 2011; Hiebl and Feldbauer-Durstmüller, 2012; Hiebl *et al.*, forthcoming). These instruments can help non-family managers to better foresee the course of the business without relying on equally tacit knowledge about the business or the markets in which it operates, as family members usually have (Giovannoni *et al.*, 2011).

However, research findings on the family firm-specific organization of management accounting practices or on the specific role that management accountants play in family firms are limited (Salvato and Moores, 2010; Duller *et al.*, 2011; Hiebl, 2012). Based on the above-described governance peculiarities of family firms, it can be expected that management accountants' roles are different in family firms and consequently, scholars in this field have underscored the need for an investigation of the potentially differing roles of finance personnel in family firms and non-family firms (Lutz *et al.*, 2010; Lutz and Schraml, 2012; Hiebl, 2012). Therefore, in this paper we investigate whether the required skill set for management accountants and their roles was dependent on the firm type (family firms vs. non-family firms).

The paper proceeds as follows: In section 2, we briefly review the relevant existing literature on the roles of management accountants and on management accounting in family firms. In section 3, based on the resource-based view of the firm theory (RBV), we derive two hypotheses. We then discuss our research methodology in section 4 and present our results in section 5. We conclude with a discussion of our results and the implications for practice and research.

## 2. LITERATURE REVIEW

In the last 15 years, accounting scholars have shown an increased interest in the organizational role of management accountants and how their role has changed or continues to change. Most empirical studies ascribe management accountants a changing role, with signs of increased business orientation. However, most of these studies also show that the main work area of management accountants is still centered around basic accounting systems (Granlund and Lukka, 1998; Malmi *et al.*, 2001; Burns and Baldvinsdottir, 2005; Jäärvenpää, 2007; Burns and Baldvinsdottir, 2007). Thus, relevant parts of the management accountants' role still seem to be in line with the bean counter cliché. However, evidence shows that a certain degree of transition in the management accountant's role actually can be observed and is still observable. This transition allows the management accountant role to develop into a business partner-type of operation without being completely freed from work associated with basic accounting systems (Granlund and Lukka, 1998; Byrne and Pierce, 2007). Some empirical results indicate that a type of modern interpretation of "bean-counting" should serve as the backbone of an advanced management accountant's role set (Vaivio and Kokko, 2006; Byrne and Pierce, 2007; Weber, 2011). Regarding the research focus of this paper, it is regrettable that existing studies on the role and change in the role of management accountants do not provide insights into the management accountant's role in family firms, because they mainly focus on large, stock-listed companies and do not broach the issue of family influence.

Existing research, however, shows that family influence in a company does affect the use of management accounting. Family firms were found to generally use less management accounting instruments and establish less discrete management accounting departments than non-family firms (García Pérez de Lema and Duréndez, 2007; Hiebl *et al.*, 2011). However, the results by Speckbacher and Wentges, (2012), Hiebl *et al.* (forthcoming) and Feldbauer-Durstmüller *et al.* (2012) indicate that only among the group of small and medium-sized companies do family firms use less management accounting tools. In contrast, among large firms, these studies found that family firms do not markedly differ from non-family firms with regard to the use of management accounting practices. In line with this notion, a previous study showed how management accounting techniques particularly help a small Italian family firm to professionalize the business (Giovannoni *et al.*, 2011). In that case study, strategic management accounting practices, such as the balanced scorecard, were also shown to help family firms in formalizing formerly informal knowledge obtained by senior family members. Upton *et al.*, 2001, underscore the view that long-range planning instruments support successful family firm development. Other studies have shown how strategic management accounting instruments, such as the balanced scorecard, may be customized to fit a controlling family's needs (Craig and Moores, 2005; Moores and Craig, 2006; Craig and Moores, 2010).

As this short review of the literature on management accounting in family firms shows, existing studies have mainly focused on the impact of family influence on the use of management accounting practices and how these practices may be adapted to the controlling family's preferences. Very little data exist on the role of management accountants in family firms, which is the focus of this research. Only Hiebl *et al.* (2011) and Hiebl *et al.* (forthcoming) have shown that management accountants in family firms are less likely to hold a university degree than their counterparts in non-family firms. However, Giovannoni *et al.* (2011) indicate that especially well-educated, non-family management accountants are able to support family firm owners in the process of professionalizing the firm. Thus, management accountants may play a crucial role in family firm development, which also warrants our research effort documented in this paper.

## 3. HYPOTHESES GENERATION

### 3.1. The Resource-Based View (RBV) and Family Firms

We employ the RBV as the theoretical framework for this paper and discuss its main ideas and application in family firms upfront. The main idea of the RBV rests on the assumption that a company's competitive advantage relies on the resources of the company and how it manages these resources (Barney, 1991; Mahoney, 1995; Barney *et al.*, 2011). According to Barney (1991, p. 101) resources comprise "all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc. controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness". Moreover, he stated that to imply a competitive advantage, resources have to be valuable, rare, and imperfectly imitable. Moreover, there should not be substitutes for the

specific resource, which are not rare or imperfectly imitable. Based on this definition, a firm's employees, such as management accountants, can also serve as (human) resources to the firm, as they may carry distinct knowledge and capabilities that provide the firm with a competitive advantage (Toms, 2010; Coff and Kryscinski, 2011).

However, not all human resources fit all organizational structures. Some knowledge or capabilities are specific to an industry sector or a single firm (Castanias and Helfat, 1991). Family firms were particularly found to rely on distinct (human) resources compared to non-family firms (Habbershon and Williams, 1999). For instance, family firms show a high level of survival ability and more patient shareholders, which enables them to have a long-term perspective and to focus on sustainably developing the firm (Dreux, 1990; Sirmon and Hitt, 2003; Hiebl, 2012). On the one hand, with regard to human capital, family firms often rely on highly committed and long-serving employees, and offer a warm and friendly environment as well as the potential for the development of deep firm-specific knowledge. However, on the other hand, family firms may have problems attracting and retaining capable non-family personnel, as family firms could lack professional growth perspectives and show limitations in wealth transfer compared to non-family firms (Astrachan and Kolenko, 1994; Sirmon and Hitt, 2003). Therefore, the notion becomes evident that based on their distinct resources, family firms may also seek different aspects of human resources when hiring financial management personnel, including management accountants (Hiebl, 2012).

### **3.2. Required Skills for Management Accountants in Family Firms**

One aspect of the proposed role change of management accountants is the increasing importance of soft skills, such as team, presentation, or communication skills (Yazdifar and Tsamenyi, 2005; Byrne and Pierce, 2007). Thus, it becomes more and more important for management accountants not only to draw the right analytical conclusions and create correct reports, but also to properly communicate the outcomes of their work and effectively advise management personnel (Weber, 2011). In the view of the RBV, these soft skills are a valuable resource to both management accountants and their employers, as they can increase effective collaboration between management accountants and management, which might also create a competitive advantage.

Family firms are often described as exhibiting a specific culture, which is built upon mutual trust, high value commitment, and informal controls (Corbetta and Salvato, 2004; Eddleston *et al.*, 2008). This culture is frequently characterized by a high usage of oral agreements that are not formalized or codified (Gedajlovic *et al.*, 2004; Ogbonna and Harris, 2005; Lambrecht and Donckels, 2006; García Pérez de Lema and Duréndez, 2007). As commitments or plans are generally made orally, family firms may also maintain higher flexibility because they stick less to formalized procedures and plans (Yu, 2001). In addition, management accountants are likely to adapt to this culture and therefore rely heavily on soft/social skills. However, soft skills are generally becoming more important for management accountants, and interpersonal skills or soft skills should have an even higher value for management accountants in family firms than for management accountants in non-family firms, as these skills are likely to be demanded more from family business owners than from non-family business owners. Therefore, we hypothesize:

*H1: For management accountants in family firms, soft skills are more important than for management accountants in non-family firms.*

### **3.3. Role Images of Management Accountants in Family Firms**

Competitive advantages of family firms are often associated with the integration of the controlling family in the firm: a long-term engagement in the firm enables family members to gain deep knowledge of the firm and its customers, competitors, and suppliers, which is often not possible to the same extent as for professional managers in (short-term oriented) non-family firms (Chirico, 2008). The personal union of family managers as owners and managers of the firm also enables quicker decision making than in non-family firms, as a lengthy process of aligning the owners' and the management teams' suggestions and views is not necessary (Ward, 1997; Braun and Latham, 2009). Family members were also found to eschew sharing decision-making power with non-family managers or employees because they fear a loss of influence in "their" firm (Fiegener *et al.*, 2000; Setia-Atmaja *et al.*, 2009; Bammens *et al.*, 2011).

Controlling families are often able to provide general management know-how from within the ranks of the family (Le Breton-Miller *et al.*, 2004). However, when specialized know-how is needed, for instance in the field of financial management and accounting, they often cannot provide family member specialists and have to rely on non-family experts in these fields, which may also affect the employment of management accountants (Filbeck and Lee, 2000; Lutz and Schraml, 2012; Hiebl, 2012). Research has also shown that family firm owners only employ non-family experts in financial management when they are forced to, for instance in times of financial distress and/or when they are required to by banks or other creditors (Lutz *et al.*, 2010). Thus, it seems likely that family firm owners, who (have to) employ professional management accountants, assign these management accountants with roles focused on core management accounting practices for which specialized management accounting knowledge is essential. These core management accounting practices are usually associated with traditional role images of management accountants, such as “financial analyst”, “number cruncher”, “scorekeeper”, or “bean counter” (Yazdifar and Tsamenyi, 2005). In contrast, advanced management accountant role images, such as “business partners” or “internal advisors”, would include the openness of the management to include management accountants in the decision-making process (Malmi *et al.*, 2001). Considering the above described aim of controlling families in order to keep the decision-making power within the ranks of the family, it is unlikely that family firm owners would assign management accountants with advanced roles. However, in non-family firms, managers do not have the level of knowledge of the firm that family managers have (Sirmon and Hitt, 2003), and thus rely more on management accountants’ views and advice in decision making, which corresponds more with advanced role images of management accountants. Thus:

*H2: Management accountants in family firms play a more traditional role than management accountants in non-family firms.*

## 4. METHODOLOGY

### 4.1. Sample

To test our hypotheses, we conducted an online survey of Austrian firms with at least 250 employees. These firms are regarded as “large” according to the European Commission, 2003, because small and medium enterprises are defined as having less than 250 employees. Before launching the survey, we pilot-tested the questionnaire for intelligibility with three management accountants and two personnel consultants specialized in the recruitment of financial management personnel, and afterwards amended the questionnaire according to their suggestions. Between July and September 2011, we contacted 1,223 Austrian firms through e-mail. We invited the heads of management accounting of the firms to participate in our online survey. Five weeks after the initial invitation, we also sent out reminder e-mails to non-respondents in order to increase the response rate.

We received a total of 314 responses, which translates into a gross response rate of 26%. Of these responses, 42 survey responses were mostly empty and could not be evaluated. In addition, 18 respondents declared that they did not serve as management accountants and were therefore also excluded from the analysis. The remaining 254 survey responses were used as the basis of our analysis. To control for non-response bias, we compared early respondents (first third) with late respondents (last third) (Leslie, 1972; Creswell, 2009). There was no indication for a non-response bias, as we could not detect significant differences between these two groups concerning their response behaviors (Fowler, 2009).

### 4.2. Measures and methods

This paper seeks to analyze the effect of firm type (family firms vs. non-family firms) on the required skills of management accountants and the roles that they play. To distinguish between family firms and non-family firms, we applied the concept of “Substantial Family Influence (SFI)” to our sample, which was introduced by Klein (Klein, 2000). Amongst other available family firm definition approaches (Chua *et al.*, 1999; Astrachan *et al.*, 2002; Rutherford *et al.*, 2008), we chose the SFI concept, as the SFI shows significant impact on organizational structure (Lindow *et al.*, 2010) and has been proven to be a reliable measure in various empirical studies on family firms (e.g., Jaskiewicz *et al.*, 2005; Hiebl *et al.*, 2011; Lutz and Schraml, 2012; Tappeiner *et al.*, 2012; Hiebl *et al.*, forthcoming). According to the SFI concept, a firm may be regarded as a family firm if a controlling family holds at

least some share of the firm's equity, and the family's share of equity, members of the executive board, and members of the supervisory board adds up to at least 1 (out of 3) (Klein, 2000).

To analyze the required skills for management accountants, we presented the participants of the survey with a total of 16 skills (of which five can be regarded as soft skills) and asked them whether they regard these skills as "important", "rather important", "rather unimportant", or "not important" for their current position. A similar approach was used to investigate the roles performed by management accountants: we asked the participants to which extent they perform nine typical roles of management accountants. For each of the nine roles, the participants were invited to state whether they perform the respective role "very frequently", "frequently", "seldom", or "never". The 16 skills and nine role images presented to the survey participants were based on an analysis of the items used in former research on management accountants' skills and roles (Malmi *et al.*, 2001; Yazdifar and Tsamenyi, 2005) and complemented by the authors. To determine the applicability of our two hypotheses, we performed Mann Whitney U tests for each of the items. The firm type (family firms vs. non-family firms) served as the group variable.

## 5. RESULTS

The survey participants' view on the required soft skills for management accountants is shown in Table 1. Our results showed that communication, team-work, and leadership appear to be the most important soft skills for management accountants. Thus, results from other European countries (namely the UK and Finland) were also confirmed for Austria, because these soft skills were also of high importance in studies from those countries (Malmi *et al.*, 2001; Yazdifar and Tsamenyi, 2005).

**TABLE 1 - REQUIRED SOFT SKILLS FOR MANAGEMENT ACCOUNTANTS**

Soft Skill	Family Firms			Non-Family Firms			p Value (Mann Whitney U Test)
	n	Median Importance <sup>1</sup>	Range <sup>1</sup>	n	Median Importance <sup>1</sup>	Range <sup>1</sup>	
Communication	57	1	1-2	85	1	1-3	0.403
Team-work	57	1	1-2	85	1	1-4	0.743
Presentation	57	2	1-3	85	2	1-4	0.858
Leadership	57	1	1-3	85	1	1-3	0.329
Change Management	57	2	1-4	84	2	1-4	0.081*

<sup>1</sup> 4-point scale of importance of skills for current position: 1 ("important"), 2 ("rather important"), 3 ("rather unimportant"), 4 ("not important")

Level of significance: \* p < 0.10; \*\* p < 0.05; \*\*\* p < 0.01

Hypothesis H1 stated that in family firms, soft skills would be of higher importance for management accountants than in non-family firms. Based on our results, this hypothesis cannot be broadly confirmed, as the Mann Whitney U tests we performed did not indicate significant influence of the firm type (family firms vs. non-family firms) on most of the analyzed soft skills. The only skill that was significantly attributed higher importance by management accountants in family firms was "change management competency". Although we did not find a difference in the median importance between family and non-family firms for this skill in Table 1, management accountants in family firms ascribed "change management competency" to be "important" or "rather important" more often than their peers in non-family firms. A weak tendency supporting H1 was also found in a larger range in non-family firms on the importance of some soft skills. This suggests that there are more management accountants in non-family firms than in family firms who assess communication, team-work, presentation, leadership, and change management skills as less or no importance.

The roles performed by management accountants are shown in Table 2. According to their self-perception, management accountants more frequently perform advanced management accountant roles, such as advisor, business analyst, business partner, or financial conscious than traditional roles, such as bean counter or number cruncher. This is also in line with former studies that have investigated the self-perception of management accountants (Granlund and Lukka, 1998; Burns and Baldvinsdottir, 2005; Jäärvenpää, 2007). However, with regard to hypothesis H2, which stated that management accountants would perform more traditional roles in family firms than in non-family firms, our data did not confirm this hypothesized relationship. Although not statistically significant, descriptive results even show an inverted relationship: management accountants in non-family firms reported



that they would perform rather traditional roles, such as bean counter or financial analyst, more often than management accountants in family firms. For the role image of the “number cruncher”, this relationship is even statistically significant, indicating that management accountants in non-family firms clearly feel that they are more “number crunching” than their counterparts in family firms.

**TABLE 2 - ROLES PERFORMED BY MANAGEMENT ACCOUNTANTS**

Role Performed	Family Firms			Non-Family Firms			p Value (Mann Whitney U Test)
	n	Median Frequency of Role Performed <sup>1</sup>	Range <sup>1</sup>	n	Median Frequency of Role Performed <sup>1</sup>	Range <sup>1</sup>	
Advisor	57	2	1-3	82	1	1-4	0.205
Business Analyst	55	2	1-3	80	2	1-4	0.209
Business Partner	55	2	1-4	82	2	1-4	0.112
Supervisor	57	3	1-4	82	3	1-4	0.533
Bean Counter	56	4	1-4	79	3	2-4	0.325
Financial Analyst	56	3	1-4	82	2	1-4	0.377
Number Cruncher	54	3	1-4	81	3	1-4	0.011**
Scorekeeper	57	3	1-4	81	3	1-4	0.503
Financial Conscious	57	2	1-4	81	2	1-4	0.368

<sup>1</sup> 4-point scale of frequency of role performed: 1 (“very frequently”), 2 (“frequently”), 3 (“seldom”), 4 (“never”)  
Level of significance: \* p < 0.10; \*\* p < 0.05; \*\*\* p < 0.01

## 6. DISCUSSION AND CONCLUSIONS

This study aimed to investigate the effects of a firm being a family firm on the required skills for management accountants and the roles that they play. We hypothesized that management accountants in family firms would rely more on soft skills and perform more traditional roles than their peers in non-family firms. Using a survey investigation amongst Austrian firms with at least 250 employees, we tested those relationships using bivariate statistical analyses. However, both hypotheses could not be broadly confirmed, and we only found a statistically significant difference for one skill (“change management”) and one role image (“number cruncher”) between family and non-family firms. Therefore, we conclude that among large firms, the roles of management accountants do not differ based on the firm type (family firms vs. non-family firms). However, the higher importance of “change management” in family firms than in non-family firms may indicate that in family firms, management accountants are asked more often to be drivers of change than in non-family firms. This result fits well into existing case study findings by Giovannoni *et al.* (2011), who described the management accountant as supporting the professionalization and change process of a family firm by introducing more sophisticated management accounting practices. Our study therefore supports the notion that professional management accountants are employed and actually perform as change agents in family firms.

To date, a quantitative investigation on the roles of management accountants in family firms has not been conducted. Therefore, these findings extend the existing literature on management accounting in family firms. In addition, with regard to the role of management accountants, our results confirm that large family firms do not significantly differ from large non-family firms concerning the institutionalization of management accounting (Speckbacher and Wentges, 2012; Hiebl *et al.*, forthcoming; Feldbauer-Durstmüller *et al.*, 2012). It therefore can be concluded that the resources specific to family firms diminish when family firms grow in size. One possible explanation might be that a culture of mutual and reciprocal trust, which is idiosyncratic to family firms (and often associated with stewardship culture, see Davis *et al.*, 1997; Corbetta and Salvato, 2004; Vallejo, 2009), could get lost together with firm growth, as previous informal collaboration in a family firm is simply made impossible due to a larger and more complex organization. Another possible explanation for our findings is that when family firms grow, they also employ professional managers more often who are accustomed to including management accountants in their decision-making process. In this regard, the roles of management accountants resemble the situation in non-family firms. Family firm owners can conclude from our results that when they grow in size, it is likely that the management accounting function will have to increasingly resemble non-family firms. Thus, they can estimate that due to growth, higher costs for coordination and control will occur in the form of increased and advanced usage of management



accountants. Nevertheless, our results also show that in change management processes, such as professionalization, management accountants may play an important role, especially in family firms.

Future research should further investigate the reasons why family firm-specific resources may vanish when family firms grow. Focusing on the role of management accountants, it might also be rewarding to replicate our study investigating small and medium-sized firms. Assuming a more intact family firm-specific culture amongst family firms in this size category, there should also be observable differences in the role of management accountants. Eventually, the contingency factor "existence of non-family management" should also be included in further research.

This study also had some limitations. First, we only investigated Austrian firms, which might limit the applicability of our results in other cultural settings. Second, to define family firms, we utilized the SFI concept, which is only one concept amongst a large array of family firm definitions. Future research might utilize different defined approaches to prove our results. Third, we focused on firms with at least 250 employees. Using the results from other studies, we concluded that in smaller firms, there should be a difference in the role of management accountants between family and non-family firms. However, this hypothesized relationship will need to be proven in future research, as we cannot confirm this relationship with our current data. Another limitation of our study is that our results rely on the self-perception of management accountants, which might not coincide with the view of managers or owners of a firm. Future research should therefore also include other perspectives in order to more comprehensively analyze the role of management accountants in family firms.

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## AN ANALYSIS OF FACTORS AFFECTING PRIVATE EQUITY INVESTMENT DECISION: EVIDENCE FROM SINGAPORE

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### ABSTRACT

*This study attempts to identify, investigate and analyse the factors, and their inter-relationship, influencing a private equity fund manager's investment decision making. This study uses a sample of thirty six Private Equity firms in Singapore based on a survey across the firms with parameters documented in various past studies. Using principle component analysis, this study arrives at interesting findings during a phase when recession was in full momentum. Growth potential of the product's market, expected or projected returns and pricing or valuation of the portfolio company along with entrepreneurial or management attributes, have been found to be the most influential factors. Growth potential of the portfolio company's product market is found to form strong correlation with regulatory & legal framework of the portfolio company's country and also with demand for the portfolio company's product. On the other hand expected return from the investment proposal is found to correlate significantly with quality of the business plan.*

*Keywords: Private Equity, Investment Decisions, Factor Analysis*

### 1. INTRODUCTION

Private equity firms receive hundreds of investment proposals to choose from, for investment. Studying how a PE Fund Manager decides on whether to invest in a particular proposal is critical. Several researchers have tried to investigate the factors that help a PE Fund manager's decision making. The firm's ability to identify winning proposals effectively and efficiently, largely depend on the PE Fund Manager's thinking, evaluation process and decision making. Past studies have found relationship of investment decision (FDI) with macroeconomic factors such as growth of GDP, inflation, unemployment and population (Jason, 2001). The size and demography of a country are important determinants for growth potential of the country's economy, thereby creating an ideal scenario for attracting foreign investments. In Deloitte's survey, 2008, 24% of the firms surveyed believe that market regulations and legal framework were the biggest barriers to the growth of the Private Equity Industry (Deloitte, 2008). Better regulatory and legal frameworks create a safer and more harmonious environment for private equity investment in a country. As much as 19% of the surveyed believed that opaque tax rules are biggest challenges to private equity investments and transparency in tax laws improve and enhance investment in the private equity industry (Deloitte, 2008). Sufficient liquidity and a positive overall funding environment also play an important role in promoting Private Equity Investments. Performance of capital markets in a country has a direct impact on private equity industry (Deloitte 2008). It is seen that with availability of liquidity / funding and growing capital markets, there is a rise in investments in the private equity industry. In a research on the German Private Equity Market, stock market performance was one of the important factors in PE investments (Paelmo, 2008). The same study concluded that fund raising and availability of public funding are some of the most important factors influencing the climate of the private equity industry (Paelmo, 2008). In addition, foreign exchange rate variability or fluctuations have a direct impact on the repatriations of foreign investors. Hence unpredictable foreign exchange rates due to high variability have a negative impact on foreign investments (Jason, 2000).

It is believed that a strong reference from a trusted source, known to the PE Firm and / or the PE Fund Manager, gives an investment proposal / deal higher weight and more credibility, whereby the PE Fund Manager would review the proposal with greater interest (Justin, 2002). Venture Capital firms place great importance on factors such as quality of source or reference of the deal rather than quality of investment proposal, geographic location, size of the deal, industry sector and extent of diversification of the portfolio companies and other factors being assessed to be critical and/or prudential are 'quality of management' and 'growth potentiality' (Nelson, 2004). A PE Fund Manager would also look at the stage of the business of the proposed portfolio company (Justin, 2002). It is true that not all PE firms invest in start-ups (Nelson, 2004). Firms invest at various stages of the business life cycle of portfolio companies, as per their own criteria. Further, several reasons have

been cited for individual firm's preferences over different geographical regions (Elango, et al 1995) such as ease of administration and monitoring, spending time with the management of the portfolio company, saving time whilst visiting the management team, economic growth potential of the geographic region among others. Further, geographic locations are based on the macro-economic factors such as inflation, GDP growth, unemployment, regulatory and legal frameworks, tax structures, size and demography of population, capital markets and foreign exchange rate stability (Jason, 2001). Similarly Industry sector depends on the individual PE firm's preferences and their need to remain diversified. It is also evidenced that degree of competition (MacMillan, et al, 1985) in the market is an important criterion for consideration by the PE Fund Manager. Quality of a business plan reflects highly on the quality of the management who are responsible for managing the portfolio company (MacMillan, et al, 1985). It is also evidenced that degree of competition (MacMillan, et al, 1985) in the market is an important criterion for consideration by the PE Fund Manager.

Another important factor influencing PE investment decision is the Quality of the Entrepreneur (Tan, et al, 1997). Entrepreneur's personality, experience, reputation and leadership qualities all have a direct impact on his / her management skills and credibility. For a PE Manager, relationship with the Entrepreneur remains a key factor to align individual interest for mutual benefit (Justin, 2002). Similarly, Quality of Management is also one of the key factors that influence a PE Fund Manager's Investment Decision (Nelson, 2004). Management personnel's expertise (Khanin, et al, 2008), experience, past success & track record and sincerity are among the important attributes that reflect on the investment potential (Tan, et al, 1997). Size of the market is also an important investment criterion (Tyejee and Bruno, 1984). A PE Fund manager is also concerned about the existing competition in the portfolio company's market space and would desire to get a better understanding of the competitive environment, before making a decision to invest in the portfolio company (Tyejee and Bruno, 1984).

PE firms carefully assess the nature of the products of the portfolio company on various counts such as proprietary or patent value, to give it competitive advantage (Macmillan et al, 1985), and market acceptance (Macmillan et al, 1985). Demand of the product and / or service offered by the firm is also an important factor that helps a PE Fund manager assess existing and future growth potential.

The primary reason for investment is to get an expected return for the PE firm. Higher the risk, higher is the return expectation (Ick, 2005). A PE fund manager evaluates the expected return and other performance metrics such as Internal Rate of Return and Profitability index of the business proposal submitted. The investment decision of the PE Fund manager would largely be influenced by the expected return from the investment and whether this return matches the PE firm's expectation of return (Nelson, 2004). PE firms usually negotiate with the portfolio company on the entry level multiple and price to lower its initial investment outlay. Pricing and Valuation remain the key factor in determining the success of the deal. Lower investment by the PE Firm helps it increase its returns on investment as the entry price tends to have a huge impact on the profitability of the deal (Ick, 2005).

Ensuring compatibility of the timing and size of liquidity events between the portfolio company and the PE Firm is critical (Justin, 2002) and hence an important factor that influences PE Fund manager's decision on whether to invest in the portfolio company or not.

PE firms often come with a lot of experience from their diverse investments. Most PE firms have a lot of value to add in the portfolio companies, with the intention of increasing the value of the portfolio company (Nahata, 2007). PE firms have the ability to re-engineer a portfolio company through their expertise and networks. The greater the scope of improvement (Elango, et al, 1995) in a portfolio company, the more attractive is the deal to a PE firm.

PE firms desire board representation so that they are involved on all the strategic decisions of the portfolio company. The size of board representation is also dependant on the size of the deal. Despite taking minority stakes, 83% of the surveyed fund managers in KPMG's Asia pacific private equity survey requested seats on the board<sup>1</sup>. In addition, management control gives the PE Firm an ability to participate in portfolio company's operations and strategy. In addition to the percentage of equity stake, the deal structure also encompasses the type of investment required by the portfolio company

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<sup>1</sup>[http://www.kpmg.com/CN/en/IssuesAndInsights/ArticlesPublications/Documents/private\\_equity\\_aspac\\_O\\_0711.pdf](http://www.kpmg.com/CN/en/IssuesAndInsights/ArticlesPublications/Documents/private_equity_aspac_O_0711.pdf)



such as equity, preference stock, debt or a combination of all, each having its own merits and demerits (George, 2005).

Generally a PE firm would like to have adequate scope for supervising and / or controlling company to safeguard its interests and in turn monitor the portfolio company to help it attain the desired level of performance (Justin, 2002). Hence scope for adult supervision is also one of the many factors that influence a PE fund manager's decision.

The quality of legal counsel and auditor hired by the portfolio company reflects on the level of concern shown by the promoters and management of the portfolio company towards its business and a PE Fund Manager would regard this as a good sign (Justin, 2002). Similarly, the credibility of the portfolio company's auditors reflects highly on the investment proposal (Justin, 2002). The performance of a PE firm was found to be correlated with capital flows, size of the fund and overall fund survival (Kaplan and Schoar, 2005). Venture capital financing was also found to be dependant on product market strategies and outcomes of the start-ups (Hellman and Puri, 2000). Added to the list of contributors to PE financing, affiliation to VC firms also found to be stemming from the reputation of the VCs (Hsu, 2004). Presence of existing equity investors in the portfolio company shows that the portfolio company is already authenticated as a worthy investment opportunity by other investors.

As seen above, there are a host of factors that influence a PE Fund Manager's investment decision making in a portfolio company.

## **2. OBJECTIVES AND RESEARCH METHODOLOGY**

### **Objectives**

The primary objective of this research study is to identify, investigate and analyze the factors and their inter-relationship, influencing a private equity fund manager's investment decision making in a portfolio company.

The objective of the study calls for an intense review of literature (secondary sources) to first identify and obtain information on the various factors, as identified by empirical studies, that influence a private equity fund manager's investment decision making. An attempt has been made to study the relevance, importance and inter-relationship of these factors in the context of private equity firms in Singapore.

### **Research Methodology:**

This research attempts to bring about an understanding of the various factors that influence the investment decisions of a private equity fund manager. The conclusions infer the most relevant factors and pave a potential path for further study in the private equity industry in Singapore. As the primary objective of the study is to identify, investigate and analyze the factors which may have an influence on a private equity fund manager's investment decision making, the factors identified by existing empirical studies are of qualitative and behavioural nature. This inherently requires understanding the perception of the private equity fund managers. In line of this objective, the data collected and used for analysis has been collected from the primary sources using a structured questionnaire.

The questionnaire was pretested and was validated during the focused group discussions with two senior private equity investment principals and executives based in Singapore. After the pretesting and validation stage, the questionnaire was finalized enlisting 46 factors, as annexed in Annexure 1. All of these factors have already been investigated by different research study (Knight, 1994; Elango et al, 1995, Tan, et al, 1996, etc). To collect the responses a 5 point Likert-like scale was used with 1 being '*Irrelevance*' of a factor and 5 being '*Most Importance*' of that factor.

The respondents were identified using the published database of Private Equity Firms from two sources namely: Singapore Venture Capital & Private Equity Directory 2009/10<sup>2</sup> and another online database<sup>3</sup> specific to Venture capital industry in Singapore. The total population of 74 private equity and venture capital firms were identified as the sample population. All the identified firms were

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<sup>2</sup> Singapore Venture Capital Association, <http://www.svca.org.sg/downloads>

<sup>3</sup> Venture Capital and Private Equity Directory:

[http://www.private-equity.org.uk/directory\\_city.php?city=Singapore&country=Singapore](http://www.private-equity.org.uk/directory_city.php?city=Singapore&country=Singapore)

administered the pretested questionnaire to collect the responses. The questionnaire was administered using an online web survey. The paper questionnaire was supplied to some of the respondents on their special request.

The responses were collected and analyzed by using different statistical tools and techniques. Before analyzing the data, the reliability and validity of the construct of the survey questionnaire was tested using Cronbach's Alpha. The reliability test of a questionnaire or any other instrument is the consistency of its result when measured each time under the same condition and upon the same subjects. The reliability of a questionnaire cannot be measured but it can be estimated by a number of methods. The internal consistency method estimates the reliability by grouping the various questions that intend to measure the same concept. After collecting responses, one needs to compute correlation values across all the questions in each possible way. The final output would be one single value referred to as the Cronbach's Alpha. The closer the value of Cronbach's alpha to 1 the greater the reliability of the construct. A value of 0.70 or higher is considered acceptable of the reliability and validity of the questionnaire's construct.

After confirming the reliability and validity of the questionnaire's construct, the data was then further analyzed using two levels of analysis. First level analysis was done by using Frequency & Descriptive Statistics. Second level analysis was done using Spearman's Rank Correlation & Factor Analysis.

### **3. FACTORS INFLUENCING FUND MANAGER'S INVESTMENT DECISION MAKING: ANALYSIS & DISCUSSION**

For the purpose of the study, a pretested questionnaire was used to collect the responses. The questionnaire had general information of the respondents and 46 factors identified from the literature review and validated through pilot study and focused group discussions. The questionnaire was administered to 74 private equity firms in Singapore. A total of 36 responses were received and after the validation process, 31 responses were found to be valid. This represents a 41.89% response rate.

#### **Profile of the Respondents' Firms**

The findings reveal that 58% of the firms were older than 10 years, with almost 39% older than 15 years in the private equity business. 20% of the firms were in business for less than 5 years. This shows a good spread of the type of firms that the respondents' represented.

About 35% of the firms had over SGD 500 million worth of funds under managements and only 10% of the firms has less than SGD 10 million. About 49% of the firms had an average investment deal size between SGD 7 - 15 million and 36% of the firms invested over SGD 15 million per deal. Only 6% of the firms invested less than SGD 1 million per deal. Both of the above show a good dispersion in the size of the respondents' firms for the study.

The investment types of the respondents' firms include venture capital, growth capital, mezzanine capital, buyouts and special situations. Results showed that 29% of the firms provided only growth capital whereas 23% provided only venture capital type of private capital investments. About 54% of the firms found to have preference for IPO as their primary choice of exit strategy whereas 38% of the firms preferred strategic or trade sale as their primary choice of exit strategy. Very few firms (8%) preferred secondary sale and none of the firms preferred leveraged recapitalization as their preferred exit strategy.

There were firms that did not provide their profile details. Such firms have been marked as unclassified in all of the above characteristics. Analyzing the above firm characteristics, it can be seen that the study sample is diverse in all the difference characteristics and hence may be a true representative of the sample population.

#### **Reliability and Validity Test – of the Survey Questionnaire**

The findings of the reliability and validity tests of the survey questionnaire are as below:

- There were 46 factors in the construct of the survey questionnaire.
- Each item is measured on a Likert Scale from 1 to 5, where 1 indicated irrelevance and 5 indicated utmost importance.
- All items of the construct do correlate adequately (in magnitude – R value higher than 0.35 and lower than 0.90) with at least one other item in the construct.

- The Cronbach's Alpha value is 0.867 which is more than 0.70, as shown in the Table 1 below. Therefore the 46 factors in the construct of the survey questionnaire do measure what they were intended to.

Table 1: Cronbach's Alpha: Reliability Statistics

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.864	.867	46

### Frequency and Standard Deviation

Based on the responses, the 46 factors were ranked based on the highest number of responses of 5 for each factor. In other words, all the factors were ranked based on the number of responses that give each respective factor the rating of 'Most Important'. The most important factor, as agreed by a majority of the respondents, is ranked number 1 and least important factor is ranked the lowest. The mean ratings indicate the level of importance. Further, the respective standard deviation of the respondents' ratings for each factor was examined. The lower the standard deviation in ratings for a particular factor, the higher is the agreement among the respondents on a particular rating for that factor. The higher the standard deviation in the ratings for a particular factor, the more diverse is the rating for that particular factor. From the above two first level of analyses, the 'Most Important' factor that influences a Fund Manager's Investment Decision making was found out. The findings and rankings of the above two tests are shown in Annexure B.

The findings reveal that 'Growth Potential of the Product's Market' was rated as the most important by 60% of the respondents, representing a majority of the respondents. Correspondingly it also had the highest mean rating and the lowest standard deviation. All these findings signify that 'Growth Potential of the Product's Market' is considered by the respondents as the 'Most Important' criterion whilst making an investment decision.

Expected Returns and Pricing / Valuation, as factors, were rated as the most important by 42% of the respondents, only second to 'growth potential', 'entrepreneur's characteristics' (namely experience and reputation) along with 'management's sincerity and expertise' were rated as the most important by 39% of the respondents. Conversely, the mean scores for 'Entrepreneur's and Management's characteristics' had marginally higher and lower deviation as compared to 'Expected Returns' and 'Pricing / Valuation', respectively.

Among the characteristics of the management, experience and past success were rated lower than their sincerity and expertise. Similarly for entrepreneurs, the experience and reputation were ranked higher than their personality, leadership skills and their relationship with the fund managers. Strategic alignment, diversification and competition of the portfolio company with the private equity firm's other investments were ranked among the lowest and were considered irrelevant by a few of the respondents.

The findings also confirm that all the 46 factors are viewed as relevant, though varying in the degree of importance, whilst evaluating an investment proposal by the fund managers in the private equity and venture capital industry in Singapore.

### Spearman's Rank Correlation

This test was used to study the respondents' ratings for one factor and their correlation with ratings for other factors, based on the correlation between such groups of factors. 95% and 99% confidence intervals or significance levels were used to test the significance of such correlation between ratings for one factor vis-a-vis with another factor or group of factors. A ranking correlation was computed to correlate one factor with other factors based on the similarity of the ratings given to each of these factors by the respondents. With the help of Spearman's Rank Correlation, one can assess then

tabulate first degree, second degree and higher degrees of correlation between various factors. The objective was to study the factors that correlate with the most important factors, as evaluated, from the frequencies and the standard deviation in ratings of these most important factors. Table 2 below shows the first degree correlation of the most important factors as evaluated from the frequency table.

Table 2: Spearman's Rank Correlation for Most Important Factors

Factors	Rank	Highly Correlated Factors
<b>Growth Potential of the product's market</b>	1	A5, A13, A17, A20, A21, A25, A30
<b>Expected or Projected Returns from the investment</b>	2	A5, A11, A18, A23, A24
<b>Issue of Pricing or Valuation of the investment stake</b>	3	A11, A17, A22, A25
<b>Sincerity of the Management</b>	4	A12, A17, A23, A24, A25
<b>Management Expertise</b>	4	A12, A13, A14, A17, A30
<b>Experience of the Entrepreneur</b>	4	A18, A28, A43
<b>Reputation of the Entrepreneur</b>	4	A11, A18, A24, A27

The seven most important factors are all highly correlated with each other either at the first or the second degree relationship, and hence form the core investment criteria by fund managers. In addition, the findings show that fund managers' who value the 'growth potential of the portfolio company's product market', as the most critical factor, also view 'regulatory & legal framework' of the portfolio company's country & 'demand for the portfolio company's product' as extremely important factors, along with the other most important factors. Fund managers' who value the 'expected or projected returns' from the investment proposal, as the most critical factor, also view the 'quality of the business plan' of the portfolio company and its industry 'profit margins' as extremely important factors along with other most important factors. Respondents' who value 'pricing & valuation' of the portfolio company, as the most critical factor, also view the 'quality of the business plan' of the portfolio company and 'degree of competition' in the industry of the portfolio company as extremely important factors along with other most important factors.

#### Factor Analysis

Using Factor Analysis, the number of factors were reduced based on correlations and the reduced number of principle components were separated to form different dimensions. The significance of this statistical tool is to help identify different groups of factors that form different dimensions implying that respondents rate the importance of the factors in each dimension uniformly. In other words a respondent rating factor 'x' at a certain level, will also rate the other factors, that are fall within a particular dimension, at the same level as the factor 'x'.

The various dimensions identified from the respondents' survey data are as listed below.

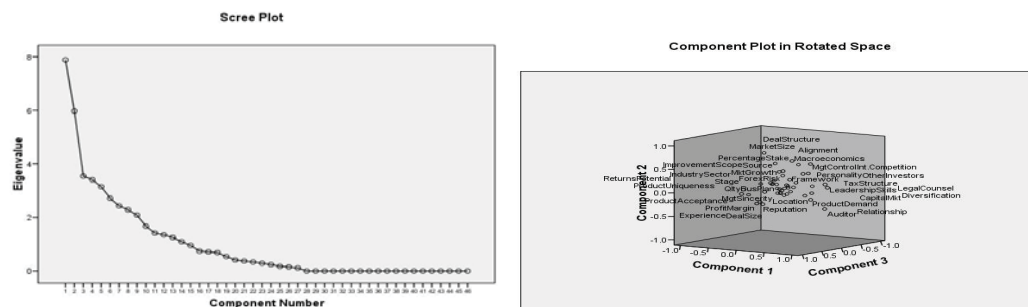
Table 3: Different Dimensions:

Dimensions	1	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>Component 1</b>	A16	A39	A9	A37	A42	A29	A14	A23	A12	A36	A36	A3	A4	A31
<b>Component 2</b>	A45	A34	A28	A20	A41	A22	A11	A30	A18	A19	A19	A10	A15	A6
<b>Component 3</b>	A44	A38	A2	A17			A8	A5						
<b>Component 4</b>	A46	A21	A27											

The top 3 dimensions, using Principal Component Analysis, account for approximately 40% of the total variance. The different components (dimensions) are visually represented on the Component Plot in Rotated Space, as derived using Varimax method of Rotation.

The top three groups of factors which explain the maximum variance within the respondents' ratings can be categorized on the following dimensions:

- Assurance: The factors within this dimension are 'relationship with the entrepreneur', 'credibility of the portfolio company's auditor & legal counsel' along with 'presence of other equity investors'. All these factors measure the confidence from parties external to the portfolio company, thereby leading to higher trust and closeness with the entrepreneur.
- Alignment: The factors within this dimension are Percentage Stake & Deal Structure along with strategic alignment with the private equity firms other portfolio companies and market size of the product. All these factors indicate the requirement of an alignment between the private equity firm and the investment proposal with respect to the product and terms & conditions.
- Nascence: The factors within this dimension are uniqueness & acceptance of the product along with Stage and amount of Investment. All these factors signify nascence in the portfolio company, indicating a higher appetite for risk of investing.



#### 4. CONCLUSION

Over the past few decades, the venture capital and PE industry has evolved and grown more mature and professional. The most critical factors now, as considered by the investment principals in the venture capital industry, include growth potential of the product's market, expected or projected returns and pricing / valuation of the portfolio company along with entrepreneur's (reputation & experience) or management's (expertise and sincerity) characteristics. This depicts a subtle change in the investment psyche of the venture capital industry in Singapore as compared to the findings of the earlier studies. Such a change in investment decision making may be attributable to the recent economic downturn. It may also be that the fundamentals of the business are gained as much, if not more, important as the characteristics of the entrepreneur or the management of the portfolio company. Another possible reason for this evolution may be that the venture capital industry has evolved and matured over the years, where in firms follow a more scientific approach using analytical and predictive tools to assess potential of an investment proposal.

Fund managers' who value the growth potential of the portfolio company's product market, as the most critical factor, also view regulatory & legal framework of the portfolio company's country & demand for the portfolio company's product as extremely important factors, along with the other most important factors. Fund managers' who value the expected or projected returns from the investment proposal, as the most critical factor, also view the quality of the business plan of the portfolio company and its industry profit margins as extremely important factors along with other most important factors. Fund managers' who value pricing & valuation of the portfolio company, as the most critical factor, also view the quality of the business plan of the portfolio company and degree of competition in the industry of the portfolio company as extremely important factors along with other most important factors.

In addition, there also seems to be different groups of respondents such that respondents within a particular group rate certain number of factors uniformly in terms of importance and these uniformly rated factors vary from one group to another. The most significant groups vary in their level of



importance based on the dimensions of 'Assurance', 'Alignment' and 'Nascence of the portfolio company and its product', which influence their investment decision making.

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## Annexure A

No.	Description of the Factor
A1	Referral Source or Person
A2	Stage of Business of Portfolio Co.
A3	Geographic Location / Country
A4	Macro factors (GDP, Size, Demography, Inflation, Unemployment Rate)
A5	Regulatory & Legal Framework of the country
A6	Corp. Tax Structure in the country
A7	Liquidity & Performance of capital Markets in the country
A8	Risk of Foreign Exchange Rate Fluctuation
A9	Investment Deal Size
A10	Industry Sector of the Portfolio Co.
A11	Quality of Business Plan (Presentation, Detail, Realistic, Assumptions)
A12	Personality of the Entrepreneur



- A13 Experience of the Entrepreneur
- A14 Reputation of the Entrepreneur
- A15 Leadership Skills of the Entrepreneur
- A16 Relationship with the Entrepreneur
- A17 Management Expertise
- A18 Management Experience
- A19 Past Success of the Management
- A20 Sincerity of the Management
- A21 Market Size of the Co's Product
- A22 Degree of Competition in the Co's Product Market
- A23 Growth Potential of the product's market
- A24 Profit Margins of the product
- A25 Demand for the product
- A26 Patent Protection for the product
- A27 Unique / Innovative Product
- A28 Acceptance of the product in the market
- A29 Portfolio Co's Business Model
- A30 Expected or Projected Returns from the investment
- A31 Liquidity or Harvest Strategy Compatibility
- A32 Past Performance and Profitability of the Portfolio Co.
- A33 Scope for Improvement
- A34 Strategic Alignment of the portfolio co. with PE firm's other investments
- A35 Internal Competition of the portfolio co. with PE firm's other investments
- A36 Diversification in the PE firm's portfolio of investments
- A37 Issue of Pricing or Valuation of the investment stake
- A38 Deal Structure (Equity, Debt, Preference Capital, Combination)
- A39 Percentage Holding / Stake in the portfolio co.
- A40 Management Control in the portfolio company's operations
- A41 Board Representation & Number of seats on the board
- A42 Scope for Adult Supervision
- A43 Deal Shopped or Rejected by other firms
- A44 Quality of Legal Counsel representing the portfolio co.
- A45 Credibility of the Portfolio Company's Auditor
- A46 Presence & Quality of Other Equity Investors in the portfolio company

## Annexure B:

### Frequency, Mean and Standard Deviation of the Ratings & Ranks

Factors	Frequency	Ranking based on Frequency	Mean	Ranking based on Mean	Std. Dev.	Ranking based on Standard Deviation
Growth Potential of the product's market	60%	1	4.6	1	0.5	1
Expected or Projected Returns from the investment	42%	2	4.26	5	0.73	14
Issue of Pricing or Valuation of the investment stake	42%	2	4.26	5	0.73	14
Sincerity of the Management	39%	4	4.32	2	0.6	2
Management Expertise	39%	4	4.29	3	0.64	5
Experience of the Entrepreneur	39%	4	4.29	3	0.64	5
Reputation of the Entrepreneur	39%	4	4.19	7	0.79	21
Management Experience	32%	8	4.16	8	0.69	11
Quality of Business Plan (Detail, Presentation, Realistic, Assumptions)	32%	8	3.87	18	0.99	41
Stage of Business of Portfolio Co.	29%	10	3.94	15	0.93	35
Demand for the product	29%	10	4.1	9	0.7	12
Deal Structure (Equity, Debt, Pref. Capital, Combination)	29%	10	3.94	15	0.89	28

Board Representation & Number of seats on the board	26%	13	3.77	22	0.99	40
Acceptance of the product in the market	26%	13	4.03	10	0.75	17
Relationship with the Entrepreneur	26%	13	3.87	18	0.92	31
Unique / Innovative Product	23%	16	3.87	18	0.81	23
Leadership Skills of the Entrepreneur	23%	16	3.77	22	0.92	30
Industry Sector of the Portfolio Co.	23%	16	3.68	28	0.94	36
Portfolio Co's Business Model	23%	16	4.03	10	0.66	8
Degree of Competition in the Co's Product Market	23%	16	4	13	0.68	10
Management Control in the portfolio co. operations	19%	21	3.55	33	1.12	43
Scope for Improvement	19%	21	3.81	21	0.79	20
Profit Margins of the product	19%	21	4.03	10	0.6	3
Liquidity or Harvest Strategy Compatibility	19%	21	4	13	0.63	4
Regulatory & Legal Framework of the country	16%	25	3.9	17	0.65	7
Percentage Holding / Stake in the portfolio co.	16%	25	3.58	31	0.89	27
Market Size of the Co's Product	16%	25	3.77	22	0.72	13
Past Success of the Management	13%	28	3.74	25	0.73	16
Personality of the Entrepreneur	13%	28	3.65	29	0.91	29
Patent Protection for the product	13%	28	3.42	35	0.92	33
Macro factors (GDP, Size, Demography, Inflation, Unemployment rate)	10%	31	3.74	25	0.68	9
Referral Source or Person	10%	31	3.58	31	0.81	24
Liquidity & Performance of capital mkts in the country	10%	31	3.35	37	0.95	37
Past Performance and Profitability of the Portfolio Co.	10%	31	3.71	27	0.78	19
Geographic Location / Country	10%	31	3.61	30	0.88	26
Diversification in the PE firm's portfolio of investments	10%	31	3.19	40	1.19	45
Strategic Alignment of the portfolio co. with PE firm's other investments	10%	31	2.9	43	1.25	46
Investment Deal Size	6%	38	3.48	34	0.93	34
Credibility of the Portfolio Co's Auditor	6%	38	3.35	37	0.84	25
Scope for Adult Supervision	3%	40	3.28	39	0.92	32
Risk of Foreign Exchange Rate Fluctuation	3%	41	3.39	36	0.8	22
Presence & Quality of other Equity Investors in the portfolio co.	3%	41	2.94	42	1.12	44
Deal Shopped or Rejected by other firms	3%	41	2.74	45	0.96	38
Internal Competition of the portfolio co. with PE firm's other investments	3%	41	2.84	44	0.97	39
Quality of Legal Counsel representing the portfolio co.	3%	41	2.74	45	1	42
Corp. Tax Structure in the country	0%	46	3.13	41	0.76	18

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## ORGANIZATION COMMITMENT AND ORGANIZATION CITIZENSHIP BEHAVIOR: THE MODERATING ROLE OF WORKPLACE SPIRITUALITY

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### ABSTRACT

*The relationship between organization commitment and organization citizenship behavior has been frequently investigated in the literature. What has received less attention is the role that workplace spirituality plays in this relationship. This study examines the extent to which workplace spirituality moderates the relationship between affective commitment, continuance commitment and normative commitment on one hand, and organization citizenship behavior on the other hand in the context of Uganda. Data was collected from a systematic sample of staff at Uganda Christian University using psychometrically valid measures from published studies. Composite measures of the study variables were calculated, followed by standardization of the moderating variable. This analysis was followed by regression analysis to examine the extent to which workplace spirituality moderates the commitment-citizenship relationship. It has been established that affective commitment does not predict altruism, but normative and continuance commitment do. Further, a sense of community moderates the relationship between affective commitment and altruism.*

**Keywords:** Workplace spirituality, organization commitment, organization citizenship behavior, Uganda, Africa

### 1. INTRODUCTION

The concept of workplace spirituality has gained considerable interest in the literature. A number of studies have examined this construct. Examples would be Milliman, Czaplewski and Ferguson's (2003) study of workplace spirituality manifestations in organizations, Fry's (2003) examination of leadership as a mechanism for facilitating workplace spirituality, and Kolodinsky, Giacalone, and Jurkiewicz's review of outcomes of workplace spirituality in relation to employee attitudes. These and many other studies demonstrate the importance of workplace spirituality on organizational outcomes. Many researchers also found it to be an avenue for improving employee well-being and organizational performance (Jurkiewicz and Giacalone, 2004). In spite of this body of work, the concept is not yet adequately examined (Duchon and Plowman, 2005) and is still in its beginning stages of serious research (Dent, Higgins and Wharf, 2005; Moore and Casper, 2006) and empirical studies are rare (Rego, Cunha and Souto, 2007). Moreover, most studies on workplace spirituality have been done in the United States. Thus contexts that have "received little attention from the literature and are culturally different from the US [are] a valuable contribution to research in this field" (Rego, Cunha and Souto, 2007:164).

Organization commitment (OC) is a central variable in organization research and is an antecedent to many positive outcomes, e.g. organization citizenship behavior (OCB). This paper focuses on the relationship between these two constructs and workplace spirituality. To date the three dimensional model of organization commitment (consisting of affective, normative and continuance dimensions) is the most widely accepted conceptualization of this construct (Cohen, 2003; Bentein et al, 2005). However, various studies show this three dimensional model of commitment is not fully consistent with empirical findings (Allen and Meyer, 1996; Ko et al, 1997). Further, while the relationship between OC and OCB is well documented in the literature (Meyer et al, 2002), certain issues do cause concern. For example, the

extent of the cross-cultural applicability of both OC and OCB constructs is contentious (Gautam et al, 2005). Further with regard to OCB, a number of issues remain to be resolved. First, the overall structure of the OCB construct is open to debate, as well as the causal relationship between dimensions of OC and the dimensions of OCB (Gautam et al, 2004). In addition, Paine and Organ (2000) assert that the meaning, dimensions and perceptions of OCB may vary from culture to culture.

Many authors concur that high levels of workplace spirituality enable employees to satisfy their spiritual needs, resulting in higher normative and affective commitment and lower continuance commitment (Fry, 2003; Fry, Vitucci and Cedillo, 2005), thus leading to greater individual performance. In light of the concerns raised over OCB and OC studies, the fragmented and non cumulating nature of workplace spirituality research (Tischler, Biberman and Altman, 2007), and the fact that most studies on workplace spirituality have been done in the west, an examination of the relationship between workplace spirituality, organization commitment and organization citizenship behavior in other contexts is warranted. This study builds largely on the work of Rego, Cuhna and Souto (2007) to examine the extent to which workplace spirituality moderates the relationship between organization commitment and organization citizenship behavior.

This study contributes to the literature in three ways. First, unlike Milliman, Czaplewski and Ferguson (2003) who study only affective commitment, this study follows Rego, Cuhna and Souto (2007) to examine normative and continuous commitment. Second, unlike Rego, Cuhna and Souto (2007) who study work performance as the outcome variable, this study has organization citizenship behavior as the dependent variable. Third, as pointed out earlier, while most studies on workplace spirituality have been done in the west where society is more individualistic, this study context is the East African nation of Uganda where society is more collective (Manyak and Katono, 2010). The findings of this study will contribute to the literature on the study variables as well provide a platform from which further diagnosis of workplace spirituality can be made in an emerging nation context. The paper is structured as follows. In the next section the literature will be reviewed on the study variables, the theories on which the study is anchored, and to identify research hypotheses. This review is followed by examining the methodology used to execute the study. The study ends with a discussion of the findings and conclusions.

## **2. LITERATURE REVIEW**

### **2.1 Definitional divergence of workplace spirituality**

No agreed upon definition of workplace spirituality is found in the literature. Rego, Cuhna and Souto (2007: 164) call it a “slippery field” where definitional controversy prevails. This controversy led Laabs (1995) to posit that it is easier to explain what workplace spirituality is not than what it is. Still other authors have expressed reservations about whether workplace spirituality deserves the attention it has received.

Ashmos and Dunchon (2000) define workplace spirituality as the recognition that employees have an inner life that nourishes, and is nourished by, meaningful work taking place in the context of a community. Gibbons (2012) asserts that a workplace can provide a sense of wholeness, connectedness at work, and deeper values. In other words, workplace spirituality is an effort to find one’s ultimate purpose in life, to develop a strong connection to co-workers, and to align one’s core beliefs and values with those of the organization (Mitroff and Denton, 1999). It is important to note that while workplace spirituality for some people involves a religious connotation, for others it does not (Milliman, Czaplewski and Ferguson, 2003; Neck and Milliman, 1994). Finally, despite its popularity, workplace spirituality has not escaped criticism. For example, some researchers assert that workplace spirituality is simply a new way of describing a combination of established variables (Moore and Casper, 2006).

## 2.2 Dimensions of workplace spirituality

The literature does appear to identify five major dimensions of workplace spirituality.

**Meaningful work:** This dimension represents the extent to which employees interact with their day to day work at an individual level. Spirituality at work assumes that individuals have personal motivation and a desire to be involved in activities that add meaning to their lives and the lives of others (Hawley, 1993).

**Sense of community:** This dimension refers to the extent to which one has a deep connection to or a relationship with others that is articulated as a sense of community (Ashmos and Duchon, 2000). It is anchored in the notion that individuals view themselves as connected to each other, and that a relationship exists between a person's inner self and the inner self of others (Maynard, 1992). This level of spirituality involves mental, emotional and spiritual connections among employees working in teams or groups (Neal and Bennett, 2000).

### Alignment with organizational values

This dimension measures the extent to which individuals experience a strong sense of alignment between their personal sense of purpose and the mission of the organization mission (Milliman, Czaplewski and Ferguson, 2003). It is premised on the notion that a sense of purpose is greater than one's self and that feeling should become manifest by making a contribution to others in society. Further, this dimension means that employees have appropriate values, a strong conscience, and a concern for the well being of society at large. The dimension shows that employees prefer to work for organizations that exhibit a strong sense of integrity, practice ethical behavior, and make a strong contribution to the welfare of society at large.

## 2.3 Organization commitment

The organization commitment literature defines organizational commitment as the strength of attachment a person has to the organization (Arnold, Cooper, and Robertson, 2005), or as the strength of an individual's identification with an organization (Mowday, Steers and Porter, 1979). Organization commitment has received much attention in the literature (Morgan and Hunt, 1994) and is associated with achieving major outcomes in organizations. For instance, it should lead to improved interpersonal relationships and performance, perception of alternatives, intentions to search or leave, and turnover (Mathieu and Zajac, 1990).

Meyer and Allen (1991) and Meyer, Allen and Smith (1993) conceptualize three dimensions of commitment: an affective component characterized by emotional attachment to an organization; a belief in, and acceptance of, the values and goals of the organization; and a willingness to expend effort on behalf of the organization. Commitment is an obligation to remain with the organization (normative) and commitment as a perceived cost associated with leaving the organization (continuance commitment). Continuance commitment is a calculation of costs and benefits, including investments and available alternatives, to replace or make up for foregone investment (Venetis and Ghauri, 2004). According to Becker's (1960) side-bet theory as validated by Meyer and Allen (1984), continuance commitment develops as employees realize they have accumulated investments or side-bets they would lose if they left the organization. The more investments made in the relationship, the more difficult it becomes to disengage from the relationship and the more the party will continue with the relationship (Venetis and Ghauri, 2004).

Each form of commitment has different behavioral consequences (Meyer et al, 2002). For example, affective commitment will result in employees that are willing to make a contribution to the organization, and usually results in organization citizenship behavior. With continuance commitment, employees feel no desire to contribute to the organization beyond what is needed to keep their jobs. They exhibit less

organization citizenship behavior, higher absenteeism and greater resistance to change. On the other hand, since feelings of obligation do not translate into feelings of enthusiasm and involvement typical of affective commitment, normative commitment employees will exhibit less pronounced positive organization outcomes (Rego, Cunha and Souto, 2007).

## **2.4 Organization commitment and workplace spirituality**

The literature strongly suggests that high levels of workplace spirituality help people to satisfy their spiritual needs. The result tends to be high normative and affective commitment to the organization while lowering continuance commitment (Milliman, Czaplewski and Ferguson, 2003). This outcome is possibly because when people perceive a strong sense of community they are able to feel they can satisfy their social, intimacy and security needs and therefore experience higher psychological well being (Haller and Hadler, 2006). Such positive attitudes are likely to translate into affective and normative bonds (Milliman, Czaplewski and Ferguson, 2003) and eventually translate into cooperative behavior (Wright and Cropanzano, 2004). This progression can be explained by the fact that workers who experience support from the organization are likely to reciprocate by exhibiting strong affective commitment and loyalty to the organization (Eisenberger et al, 2001).

Similarly, the sense of enjoyment at work is also a source of psychological well-being (Kets de Vries, 2001). Just like the opportunity to do meaningful work, it instills a sense of purpose and improves worker self esteem, happiness and personal growth (Rego, Cunha and Souto, 2007). In the same way, when employees feel a strong sense of community the organization provides them an opportunity for inner life. Because they perform meaningful work, they feel respected as valuable spiritual and intellectual beings (Strack et al, 2002). Lastly, when employees feel their values and those of the organization are aligned, they perceive greater satisfaction and develop strong affective and normative bonds (Cooper-Thomas, van Vianen and Anderson, 2004) that result in more cooperative behaviors and self-esteem (Herrbach and Mignonac, 2004).

In summary, when employees feel the organization cares about their well being, they experience high levels of health and psychological and emotional safety (Brown and Leigh, 1996) that eventually translates in cooperative behavior and more affective and normative commitment. Workplace spirituality as defined by the presence of traits such as trust, respect, meaningful work, dignity and honesty, creates an environment that enables the integration of personal and professional selves, thus engaging the whole person in the work process (Jurkiewicz and Giacalone, 2004).

## **2.5 Organization citizenship behavior (OCB)**

This construct is an example of extra role behaviors that are closely linked to organization commitment (Gautam et al, 2004). According to Organ (1988), OCB is an outcome of a committed workforce, which is characterized by voluntary extra role behaviors that are not recognized by the formal organization's reward system. Smith, Organ and Near (1983) view OCB as contributions individuals make in the workplace that go beyond role requirements and contractually rewarded job achievements.

The OCB construct is contentious between two related models. Some authors propose a five dimensional structure made up of conscientiousness, altruism, civic virtue, sportsmanship and courtesy (Organ, 1988; Podsakoff, Ahearne and MacKenzie, 1997). Others propose a two dimensional model consisting of altruism and compliance (Smith, Organ and Near, 1983). It has been suggested that the first model appears to be consistent with values in individualistic societies while the latter model is more universal (Gautam et al, 2004). In light of this argument, the study adopted the two dimensional model.



Other conceptualizations of OCB have emerged. Williams and Anderson (1991) propose a two factor model. OCB-I focuses on citizenship behaviors geared towards an individual. OCB-O behaviors focus on the organization. Coleman and Borman (2000) propose a three factor model consisting of interpersonal citizenship performance, organization citizen performance, and task citizenship performance

Bretton, Giles and Schraeder (2008) provide several helpful definitions of key terms. Altruism is behavior directed to helping a specific person at work, e.g. assisting a coworker without being asked. Generalized compliance refers to employee conscientiousness that goes beyond enforceable work standards, e.g. doing more than what is required to complete a task or voluntarily offering ideas to solve an organizational problem. Sportsmanship is the extent to which nuisances on the job are tolerated, e.g. enduring inconveniences without complaint or making a huge issue out of a minor thing. Courtesy refers to contacting others before taking actions or making decisions, e.g. sending a reminder or giving coworkers advance notice before taking action. Civic virtue is active participation in organization affairs, e.g. attending meetings and generally keeping abreast of organizational issues.

In summary, the structure of the OCB construct is still uncertain given the wide array of conceptualizations. Thus the results of OCB studies are a function of how the concept is defined and which dimensions are actually incorporated into a study (Bretton, Giles and Schraeder, 2008). While aware of the lack of consensus, the following hypotheses are advanced for examination within the Ugandan context:

*H1: Affectively committed employees will exhibit higher levels of altruism and compliance than normative and continuance commitment employees*

*H2: Sense of community will moderate the relationship between affective, continuous, normative commitment and altruism*

*H3: Alignment of values will moderate the relationship between, affective, continuous, normative commitment and altruism*

*H4: Meaningful work will moderate the relationship between affective, continuous, normative commitment, and altruism*

### **3. METHOD**

The study utilizes a triangulation technique (Campbell and Fiske, 1959) in that both qualitative and quantitative techniques are used. First, a qualitative study was carried out to gain an in-depth understanding of the study concepts by talking to, and holding conversations with, various management experts, human resource managers, scholars, MBA students, and perusing the literature. This study enabled the researchers to place the investigation in context and to identify the measures of the various study dimensions. Following this investigation, a list of all the permanent staff at Uganda Christian University was obtained from the Human Resource Office to be used as the sampling frame. To obtain a systematic study sample, a random starting point was chosen. Every third name was then chosen for inclusion in the study. The study questionnaire was sent to the identified people accompanied by a letter from the HRM office explaining the purpose of the study and requesting the recipient to complete the questionnaire. In all, about 200 questionnaires were sent out and 74 usable ones were collected back, representing 37% response rate.

To overcome common method bias, two procedural measures were taken (Podsakoff et al, 2003). First, respondents were assured of confidentiality and anonymity to reduce evaluation apprehension and the

questionnaire had no correct or incorrect answers. Second, different sets of instructions were given for the different variables to assure psychological separation.

#### **4. MEASURES**

Measures from published studies with established validity and reliability were used to make the study constructs operational. Organization citizenship behavior was measured with the original index adopted by Smith, Organ and Near (1983). Altruism and compliance were measured with three items each from this scale. Responses were anchored on a 5-point Likert scale, 1=Strongly Disagree to 5=Strongly Agree. Affective commitment was measured with six items from the Meyer and Allen (1983) study, while continuance and normative commitment were measured with five and four items respectively from the same scale. All these commitment measures were anchored on a 5-point scale ranging from 1=Strongly Disagree and 5=Strongly Agree.

Three workplace spirituality dimensions were considered for this study. Teams' sense of community was measured with three items from Milliman, Czaplewski and Ferguson (2003) and one item from Ashmos and Duchon (2000). Alignment with organizational values was measured with three items from Milliman, Czaplewski and Ferguson (2003), two items from Ashmos and Duchon (2000), and one item from Rego, Cuhna and Souto (2007). Meaningful work was measured with three items from Milliman, Czaplewski and Ferguson (2003). All the scales were anchored on a 5-point scale ranging from 1 "strongly disagree" and 5 "strongly agree".

Data analysis started by constructing composite measures of the OC, OCB, and workplace spirituality dimensions. Following Frazier, Tix and Barron (2004), the workplace dimensions were standardized so they had a mean of zero and a standard deviation 1, to reduce the effect of multi-collinearity. Thereafter, regression analysis was carried out to test the study hypotheses.

#### **5. RESULTS**

The gender division between the 74 respondents was male 63% and 36.5% female. In term of marital status, 49% of the respondents were married, 39% were single while 12% did not disclose their status. Most of the respondents (48%) were in the 20-35 age range, and those between ages 36-45 were only 4%. Those between the ages of 46-55 were 19%, those between ages 56-65 were 13%, and those over 66 years of age were also 13%. In terms of length of service, those with less than one year's service were the minority at 7%, those with service between 1-2 years were 28%, those with 3-5 years of service were 26%, and those with 6-8 years were 7%, while those exceeding 9 years were 21.7%.

The analysis began with the construction of a correlation matrix to examine the relationship of all the study variables. This analysis was followed by an examination of their statistical reliabilities (Table 1). Regression analysis was done in two phases. In phase one, the commitment dimensions (independent variables) were regressed against altruism (dependent variable) in three steps as shown in table 2. In phase two, the standardized interaction terms of each of the three spirituality dimensions was entered in the model (tables, 3, 4 and 5). Lastly, phase one was repeated for the compliance dimension (table 6) though no moderation analysis was carried out for this variable.

The correlations shown in table 1 reveal that affective commitment is significantly correlated to continuous commitment, but not to normative commitment. However, both normative commitment and continuous commitment are significantly correlated. Alignment of values and meaningful work are significantly correlated to affective commitment, and meaningful work is also significantly correlated to normative commitment, and alignment of organizational values. Altruism and compliance are significantly correlated with meaningful work. Next, regression analysis was carried between the independent and dependent variables followed by moderation analysis.

Table 1: Correlation of study variables

Variables	M	SD	1	2	3	4	5	6	7	8
Affective Commitment	4.22	.619	<b>.65</b>							
Continuous Commitment	3.27	.873	.252*	<b>.70</b>						
Normative Commitment	3.57	.783	.201	.608**	<b>.66</b>					
Community WPS	3.94	.816	.171	.03	.009	<b>.92</b>				
Alignment WPS	3.99	.711	.500**	.163	.27	.45*	<b>.70</b>			
Meaningful Work	4.36	.511	.436**	.335**	.47**	.233	.30*	<b>.76</b>		
Altruism	4.13	.572	.139	-.04	.209	.214	.091	.27*	<b>.64</b>	
Compliance	3.93	.776	.195	.195	.111	.145	.087	.166	.25**	<b>.60</b>
$p < .05^*$ $p < .01^{**}$ (Two-tailed) Reliability coefficients in bold on diagonal										

Tables 1 and 2 show that affective commitment does not predict altruism in this sample population, but continuous and normative commitment does predict, thus the rejection of *H1*.

Table 2: Regression of Commitment Variables and Altruism

	Step 1	Step 2	Step 3	
Active Commitment	.170	.195	.176	
Continuance Commitment		-.099	.316*	
Normative Commitment			.366*	
Adjusted R	.014	.008	.080	
Change in Adjusted R			.009	.084*
$P < .05^*$ $p < .01^{**}$ (two-tailed)				

Table 3 shows a significant interaction between the affective commitment dimension and sense of community, partly supporting *H2*. However, no significant interaction is found between the other spirituality dimensions and all the commitment variables as evidenced in tables 4 and 5, thus rejecting *H3* and *H4*.

Table 3: Moderation of Sense of Community with Commitment Dimensions

	Step 1	Step 2	Step 3
Active Commitment	.017	.215*	.239*
Continuance Commitment		.229	-.182
Normative Commitment			-.073
Adjusted R	.083	.146	.216*
Change in Adjusted R		.072	.004
P<.05* p<.01** (two-tailed)			

Table 4: Moderation of Alignment of Values with Commitment Dimensions

	Step 1	Step 2	Step 3
Active Commitment	-.002	.022	.010
Continuance Commitment		-.029	-.041
Normative Commitment			.025
Adjusted R	.065	.051	.035
Change in Adjusted R		.001	.001

Table 5: Moderation of Meaningful Work with Commitment Dimensions

	Step 1	Step 2	Step 3
Active Commitment	.030	-.077	-.135
Continuance Commitment		.137	.081
Normative Commitment			.120
Adjusted R	.086	.100	.103
Change in Adjusted R		.027	.017

Table 6 shows that all the three commitment variables do not predict compliance, thus partly rejecting *H1*.

Table 6: Regression of Commitment Variables with Compliance

	Step 1	Step 2	Step 3	
Active Commitment	.186	.168	.162	
Continuance Commitment		.075	.012	
Normative Commitment			.105	
Adjusted R	.019	.008	-.002	
Change in Adjusted R			.005	.007
P<.05* p<.01** (two-tailed)				

## 6. DISCUSSION

The findings of this study are mixed, which is consistent with the lack of consensus in the literature. While it is expected that affectively committed workers will exhibit high levels of altruism, the findings instead show that it is normative and continuous commitment workers who do so. In a country like Uganda where many workers are dissatisfied with their salaries and strikes are a common occurrence, it is possible that workers used in this study are dissatisfied with their jobs. Hence they exhibit only normative and continuous commitment. However, consistent with our expectations, we find a significant interaction between sense of community and affective commitment influences altruism. As explained, a sense of community refers to the extent to which an employee has a deep connection to or a relationship with others (Ashmos and Duchon, 2000). It is possible that individuals in this study view themselves as connected to each other and perceive a relationship between their inner self and the inner self of others (Milliman, Czaplewski and Ferguson, 2003). If so, this would lead them to develop a cooperative behavior manifested in altruism.

## 7. CONCLUSION

This study set out to examine the extent to which workplace spirituality variables, sense of community, alignment with organisation values and meaningful work moderate the relationship between organization commitment and OCB, altruism in particular. The study established that affective commitment per se does not predict altruism; however, an interaction between affective commitment and sense of community significantly influences OCB (altruism).

## 8. MANAGERIAL IMPLICATIONS

Given the importance of OCB in the performance of organizations, managers should as much as possible encourage the development of spirituality in their organizations, particularly a sense of community. Activities that encourage workers to stay connected with each other should be encouraged.

### 9.0 Limitations of the study

The study utilized a small sample of respondents from only one institution. Further, the scope of OCB was limited as only two variables were examined. Similarly, the scope of workplace spirituality was also limited as only three dimensions were examined. In spite of these limitations, the findings of this study can be used as a platform from which further diagnosis of the study variables can be made.

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# EVALUATION OF HUMAN DEVELOPMENT INDEX AND ICT DEVELOPMENT INDEX, COMPARATIVE ANALYSIS OF THE OECD AND THE EUROPEAN MEMBERS AND TURKEY

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## ABSTRACT

*The objective of this study is to research the relation between Human Development Index (HDI) and ICT (Information and Communication Technologies) Development Index. United Nations Development Programme (UNDP) published its latest report "Human Development Report 2011" which identifies the countries rankings in terms of human development levels. Information Telecommunication Union (ITU) developed an ICT Development Index (IDI) to measure countries' progress towards becoming information societies. The components of HDI and IDI have different indicators, but classification of countries according to development level and country rankings are very similar. For this reason, the relation between HDI and IDI values will be compared and tested statistically to show the relation between the two. UNPD and ITU organization reports and published data will be used for this comparative analysis and assessment of ranked values and development categories of the countries.*

*There are three parts in this study; first is the comparison between the HDI and IDI values as a development category for World Countries, OECD Countries and European Union Members. Second is the evaluation of Human Development Index and its components from 1980 through to 2010 for Turkey. Third is the assessment of the relation for World, OECD, European countries and Turkey in terms of HDI and IDI index.*

**Keywords:** Human Development Index, ICT Development Index, Information Society, Turkey, OECD, European Union Members

## 1. INTRODUCTION

Human development Index (HDI) was introduced by the United Nations Development Programme (UNDP) in 1990 first. UN experts prefer to use the HDI to measure a country's development. This composite index is a simple average of three indices reflecting a country's achievements in health and longevity (as measured by life expectancy at birth), education (measured by adult literacy and combined primary, secondary and tertiary enrollments), and living standard (measured by GDP per capita in purchasing power parity terms). Human Development Index (HDI) is an indicator that measures the socioeconomic development of a country. HDI components are determined as HDI value, life expectancy at birth (years), average years of schooling (years), expected years of schooling (years), gross national income (GNI) per capita.

The main objective of human development, as stated in the Human Development Report of the United Nations Development Programme (UNDP), is to create an enabling environment for people to enjoy long, healthy, and creative lives.

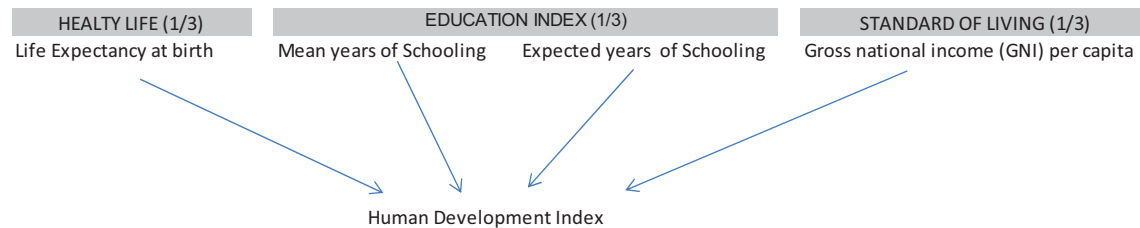
## 2. LITERATURE REVIEW

In its 21 years history, HDI has become one of the most widely used indicators for measuring the socioeconomic development of a country. In recent studies we see that human development scores are used to determine the countries position in human development continuum (Gürses, 2009; Purohit, 2008). Gürses argues that knowledge persists as Turkey's major weakness in the human development process. Another study finds a positive link between the trade and the HDI (Davies & Quinlivan, 2006). A modified human development index (MHDI) is applied to measure the effects of human development in different countries. The MHDI includes many related social variables such as health effects, political rights, civil liberties, enrollment rate, and adult literacy rate (Gürlük, 2009). Therefore, development of a country is not considered to be only growth of per capita income but improvement in the array of human needs, such as, health, sanitation, education etc. (Streeten 1981). There are many studies to assign weights of components for HDI value; one is by using principal component analysis (Nguefack G. Tsague, Klasen S. - Zucchini W., 2011) In a previous study, we evaluated the ICT Development index (Balaban E., Cilan C., Kaba G., 2010). But there is no study to

test the similarity the results of ICT Development and Human Development Index. In this study ICT Development index value will be compared with human development index values in terms of impact of development level and ranked values.

### 3. RESEARCH METHODOLOGY

Theoretical framework of this study is based on the development of countries in terms of Human Development and ICT Development indices, secondary data is found from the UNDP Report and ITU Report 2010.



**TABLE 1. INDICATORS OF HUMAN DEVELOPMENT INDEX**

In this research, Secondary data from internet (Human Development Report, 2011) and (Measuring the Information Society, 2012) are used for analysis. There are 194 countries to evaluate the HDI but 143 countries can be evaluated both HDI and IDI values. 34 OECD and 26 EU members are evaluated in the comparative analysis of HDI and IDI values. Calculation method of HDI and IDI indices based on the min and max values on the series, GNI index is adjusted by using logarithmic values of max and min values.

The most important research question: is there a significant relationship between HDI and IDI values among World, OECD and EU countries and Turkey? The purpose of our current study is to respond to this question.

### 4. FINDINGS AND DISCUSSIONS

#### 1.1. HDI Values by Components

Human Development Index values for 194 countries were calculated in the report of UNDP, Human Development Report, 2011. EU members and OECD countries have more averages than world countries (194 countries) average values. Turkey has higher HDI value than average of world countries although Turkey has least mean years of schooling (6.47) and least expected years of schooling (11.84) in Figure 1. But mean years of schooling is growing from 2008 through to 2010 in Figure 2.

**FIGURE 1. HUMAN DEVELOPMENT INDEX AND ITS COMPONENTS**

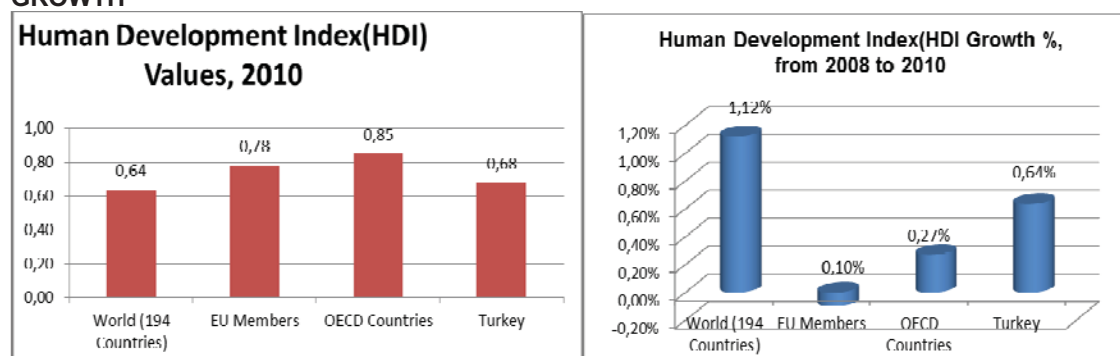
Human Development Index (HDI) and Components for 2010					
	Life expectancy at birth (years)	Mean years of schooling	Expected years of schooling	GNI per capita (2008 PPP US\$)	HDI Value
World (194 Countries)	69,26	7,59	12,08	13463,10	0,64
EU Members	75,34	10,27	14,66	15786,26	0,78
OECD Countries	79,39	10,72	16,00	30727,17	0,85
Turkey	72,23	6,47	11,84	13359,24	0,68

Turkey is also growing (0.64%) more than the European and the OECD countries as it is seen in Figure 2.

FIGURE 2. GROWTH OF HUMAN DEVELOPMENT INDEX

Human Development Index (HDI) Growth from 2008 to 2010					
	Life expectancy at birth (years)	Mean years of schooling	Expected years of schooling	GNI per capita (2008 PPP US\$)	HDI Growth %
World (194 Countries)	0,84%	2,24%	0,00%	2,10%	1,12%
EU Members	0,47%	1,65%	0,00%	-7,43%	-0,10%
OECD Countries	0,43%	1,11%	0,00%	-1,50%	0,27%
Turkey	0,46%	2,76%	0,00%	-0,43%	0,64%

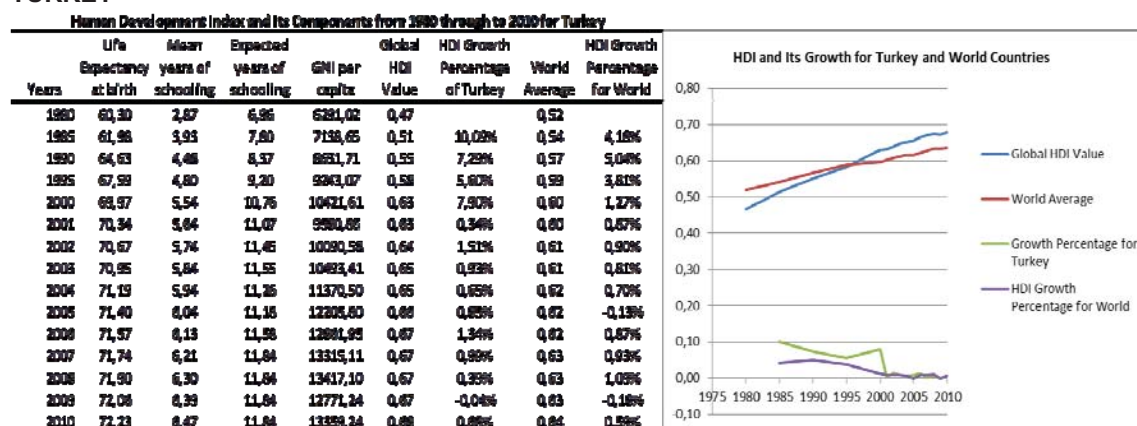
FIGURE 3. COMPARASION OF HUMAN DEVELOPMENT INDEX AND ITS GROWTH



#### 4.2 Indicators of Human Development Index for Turkey

Turkey is growing from 1980 through to 2010 in terms of Life expectancy at birth, mean years of schooling, expected years of schooling, GNI per capita and Global HDI value. However, the growth rate is decreasing especially after 2000. In order to be able to catch the EU members and OECD countries average, mean years of schooling should be increased more. Turkey as an OECD member not an EU member has 0,679 HDI, ranked 56th country and in the 2nd. Group (high development level) but it has 4.42 IDI value, 76th. Country ranked and in the 3rd group (medium development level). Although Turkey has been among the fastest progressing countries, international comparison shows that Turkey needs more schooling and educated people to reach a higher human development index.

FIGURE 4. HUMAN DEVELOPMENT INDEX FOR TURKEY



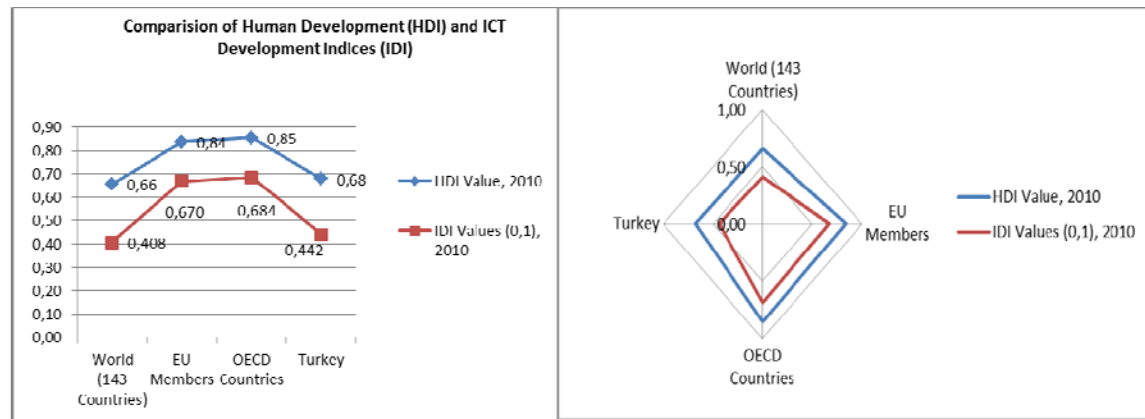
### 4.3 Relation Between Human Development and ICT Development

The world, the OECD countries and the European members have similar behavior as seen in the line graphic and the radar chart graph in Figure 5 in terms of HDI and IDI index values. Therefore we need further analysis to statistically prove this relationship between HDI and IDI values. There are no differences ranked HDI and IDI values for the World, the OECD countries and the EU members according to t paired test (p-values > 0.05) results in Table3.

	Human Development Index(HDI) Values			ICT Development Index(IDI) Values		
	World	OECD	EU	World	OECD	EU
n	143	34	26	143	34	26
Mean	0.656	0.853	0.837	4.081	6.842	6.695
St.Dev.	0.179	0.052	0.040	2.119	1.059	0.825
Min	0.140	0.679	0.743	0.830	3.750	5.190
First Quartile	0.519	0.831	0.811	2.290	6.353	6.040
Median	0.689	0.866	0.850	3.650	6.980	6.685
Third Quartile	0.803	0.885	0.869	5.970	7.600	7.435
Max	0.938	0.938	0.895	8.400	8.400	8.230
Confidence Level (90%)	0.024729276	0.015012347	0.013428	0.2933845	0.3074151	0.2762858

**TABLE 2. DESCRIPTIVE STATISTICS OF HDI AND IDI VALUES**

**FIGURE 5. EVALUATION OF HUMAN DEVELOPMENT AND ICT DEVELOPMENT**



t-Test: Paired two samples for mean						
	World Countries		OECD Countries		EU Countries	
	Ranked HDI	Ranked IDI	Ranked HDI	Ranked IDI	Ranked HDI	Ranked IDI
Mean	72	72	21,67647059	20,58823529	23,9230769	25,15384615
Variance	1716	1716	257,6194296	250,0677362	159,593846	149,4953846
Observations	143	143	34	34	26	26
PearsonCorrelation	0,96688171		0,778001369		0,77748716	
Hypothesized Mean Difference	0		0		0	
df	142		33		25	
t Stat	0		0,597592101		-0,7560302	
P(T<=t) two-tail	1		0,554191112		0,45669639	
t Critical two-tail	1,976810994		2,034515297		2,05953855	
Reject the Null Hypothesis	No		No		No	

**TABLE 3. DIFFERENCES TEST OF RANKED HDI AND RANKED IDI VALUES**



## 5. CONCLUSIONS

Human Development Index is not only economic growth index but also includes the life expectancy, and educational growth. Life expectancy, education and standard of living are getting better in the world.

Turkey needs more main years of schooling to catch up the EU and OECD countries as revealed by the indicators focused on human development. Therefore, political decisions about continuing education will play an important role in increasing the human development index for Turkey. In this research, findings reveal an interesting pattern to group development levels in terms of HDI and IDI values. It is also possible to find country ranked values and country development levels according to HDI and IDI index values.

The most important finding of this study is the relation between human development level and information society level. ICT development index as a measurement of information society has similar behavior with human development index when the countries are ranked and grouped according to HDI and IDI values. As a result, our hypothesis stating that there is no significant difference between human development and information society levels can be validated.

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# EXAMINING THE DIFFERENCES IN THE GLOBAL INNOVATION INDEX BETWEEN THE G20 VERSUS THE NEXT 11 COUNTRIES

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## ABSTRACT

*Innovation is an important but challenging factor in creating and sustaining competitive advantage. Identifying the level of achievement of the Next 11 (N11) countries relative to G15 would act as a benchmark of their potential to compete successfully. Nine of the twelve variables selected to compare G15 versus N11 are significant. The most important innovation factors for G15 are rule of law, ICT access and high tech imports. N11 need more political stability and higher R&D expenditures to achieve the dream of becoming the world's largest economies in the 21st century as predicted by Goldman Sachs.*

**Keywords:** *Global innovation index, Next 11 and G20 countries, Political stability, Rule of law*

## 1. INTRODUCTION

In the last two decades, there has been an increased awareness and appreciation of innovation (Drazin and Schoonhoven, 1996) as a means to create and maintain sustainable competitive advantage and as a key element of business success (Johannessen, Olsen and Lumpkin, 2011). The traditional resource based view asserted that competitive advantage rested on basic core values like quality, cost and timeliness (López, 2005; Lee, 2009). However, as a result of increasing global competitiveness and technological advances, innovation has become an important additional factor in creating and sustaining competitive advantage in a rapidly changing business environment (Johannessen et al., 2001; Lee, 2009). Unfortunately, managing the risky and complex process of innovation has been challenging (Hollins, 2000; Bueno et al., 2008) and not always managed well.

Zaltman et al. (1973) provided one of the earlier definitions of innovation as "any idea, practice, or material artifact perceived to be new by the relevant unit of adoption". Different authors have used a variety of factors and approaches to measure innovation at different levels, such as the firm or the country level. Garcia and Calantone (2002) report that the terms "radical, incremental, really-new, imitative, discontinuous, architectural, modular, improving, and evolutionary" have been used to define innovation. Johannessen et al. (2001) have suggested that "the picture that emerges from these diverse approaches underscores the point that a multitude of factors are interacting to induce innovation in economic life". Lee (2009) concluded that "although each factor remains important, it is unlikely by itself or as part of a group to provide a sustainable competitive advantage". This study is based on the definition provided by Mashelkar and Prahalad (2010) that "An innovation is the implementation of a new or significantly improved product, a new process, a new marketing method, or a new organizational method in business practices, workplace organization, or external relations". This definition forms the basis of the Global Innovation Index (GII) developed by INSEAD in 2007 ([www.globalinnovationindex.org/gii/main/fullreport/index.html](http://www.globalinnovationindex.org/gii/main/fullreport/index.html)). Given the importance and the impact of innovation on the development of a country, examining how N11 compare today with G15 regarding their innovative capabilities is useful. The prediction by Goldman Sachs that N11 have the potential to replace some of the current members of G20, any findings that support this claim or aid N11 in achieving this goal are useful. Therefore, the purpose of this manuscript is to examine the level of innovativeness of G15 versus the N11 countries. Identifying the current level of achievement of G15 would present a benchmark for N11 to emulate and, eventually, to exceed in achieving the "dream".

### 1.1 The Global Innovation Index

The approach adopted in this study is based on the Innovation Input Sub-Index of the Global Innovation Index (GII) that is the simple average of five pillar scores. We exclude the Output Innovation Sub-Index

because the Input sub-index is more instrumental in determining the potential achievements of the N11 countries. The five pillars and the composite variables that constitute the Input sub-index are as follows:

- 1) Institutions - Political (3), Regulatory (3), Business Environment (3)
- 2) Human Capital & Research - Education (5), Tertiary Education (6), R & D (3)
- 3) Infrastructure - ICT (4), Energy (4), General Infrastructure (3)
- 4) Market Sophistication - Credit (4), Investment (4), Trade & Competition (5)
- 5) Business Sophistication - Knowledge workers (4), Innovation Links (5), Knowledge Absorption (4)

To elaborate, the Institutions pillar is made up of the political, regulatory and environment composite variables. The numbers in brackets represent the individual variables that constitute the different composite variables. For example, the political composite variable consists of political stability, government effectiveness and press freedom.

## **1.2 Identifying the G15 and the N11 Countries**

The twenty countries with the largest economies (G20) was formed in 1999 to give developing nations more of a voice in shaping the global economy beyond the G8 comprising U.S., Japan, Germany, UK, France, Italy, Canada and Russia. The other eleven members of G20 are: Argentina, Australia, Brazil, China, India, Indonesia, Mexico, Saudi Arabia, South Africa, South Korea and Turkey. Another member is the European Union, which is excluded from this study. Together, the 19 countries represent 90% of the world's economy.

In 2007, Goldman Sachs investment bank identified eleven countries labeled N11 as having a high potential of becoming the world's largest economies in the 21st century (Wilson and Stupnytska 2007). They used five criteria comprising macroeconomic stability, debt to GNP ratio, political maturity, openness to trade and quality of education as projected two decades into the future to identify the following countries: Bangladesh, Egypt, Indonesia, Iran, Mexico, Nigeria, Pakistan, Philippines, S. Korea, Turkey and Vietnam. Four of these countries (Indonesia, Mexico, S. Korea and Turkey) are also members of G20 and we have kept them in the N11 group of countries as they still have some economic, political and social issues to resolve. Therefore, the rest of the paper covers comparisons between the remaining G15 and the N11 countries as a group.

While the projections are encouraging for N11, achievement of this potential depends on making the appropriate economic, political and social decisions starting from the current state of affairs. Goldman Sachs itself declared that they “are conscious of the leap of faith that is needed to believe that this potential might be realized”. They have called this undertaking a dream precisely for that reason and confess that for several of the N11 countries, the hurdle is even higher than the BRIC's (Brazil, Russia, India and China).

## **2. ANALYSIS**

Recognizing that the Input sub-index is based on nearly 60 variables across 15 composite factors makes the task daunting and perhaps unnecessarily complicated for our purposes. Hence, we are guided by the construction of the globalization index that uses practical proxies to calculate it. Furthermore, the number of countries (26) in our sample also necessitates identifying a manageable group of parsimonious variables for statistical reasons. Consequently, we have selected 12 variables based on the collective judgment of several colleagues who are experienced teachers of international marketing and other international courses. The resulting 12 variables and the statistics for the 26 countries are presented in Table 1.

### **2.1 GII for the N11 and G15 Countries**

The current level of GII is significantly different for G15 compared to N11 (44.91 vs. 32.03,  $p = .001$ ). Therefore, we examine the differences between the two groups for the 12 selected variables that are included in constructing the GII (Table 1). Nine of the 12 variables are significant across the two groups. In each case, the G15 group collectively attains a much higher average compared to the N11 countries.

This suggests very strongly that N11 have a lot of ground to cover to realize their potential and to catch up with the average achievement of G15. Ease of starting a business, infrastructure and exports are the three variables that are not significant. Especially in terms of encouraging foreign investment and nurturing local entrepreneurship, the achievement of N11 is encouraging. Likewise, the overall level of the infrastructure for the group is welcome news as lack of infrastructure is often a significant obstacle in the development of a country. Luiz (2010) has claimed that “Productive public expenditure in the areas of infrastructure .... .. can play an important role in promoting economic growth and encouraging private investment”. Newel et al. (2009) also saw effective infrastructure as essential for economic growth and business competitiveness.

**TABLE 1 - GROUP DIFFERENCES**

<b>GII Variable</b>	<b>Group</b>	<b>Mean</b>	<b>Sig.</b>
Global Innovation Index	N11	32.03	.001
	G15	44.91	
Political Stability	N11	20.46	.000
	G15	53.68	
Rule of Law	N11	38	.003
	G15	68.62	
Ease of Starting Business	N11	81.08	.92
	G15	80.28	
School Life Expectancy	N11	43.26	.08
	G15	58.03	
Tertiary Enrollment	N11	28.79	.06
	G15	49.45	
R&D Expenditure	N11	12.91	.016
	G15	32.05	
ICT Access	N11	33.68	.011
	G15	59.57	
Infrastructure	N11	39.16	.23
	G15	43.46	
Exports	N11	25.26	.21
	G15	17.71	
R&D expenditure by Bus.	N11	30.68	.004
	G15	63.73	
University Collaboration	N11	41.04	.000
	G15	59.50	
High Tech. Imports	N11	20.84	.006
	G15	38.57	

## 2.2 Multiple Regression Results

Multiple regression analysis is conducted to determine the strength of the association (Hair, Anderson and Tatham, 1987, p. 21) between GII and the significant variables separately for G15 and N11. All regressions analyses reported here are significant at the .01 level.

The equation for N11 countries ( $R^2_{adj} = .96$ ) is:

$$GII_{11} = 23.94 + .28(RDExpend) + .22(Polstabil)$$

with  $\beta = .65$  and  $\beta = .50$ , respectively.

The equation for G15 countries ( $R^2_{adj} = .91$ ) is:

$$GII_{15} = 10.06 + .22(Rulelaw) + .25(HiTechImports) + .17(ICTAccess)$$

with  $\beta = .63$ ,  $\beta = .38$  and  $\beta = .37$  for the three variables, respectively.

Regression results indicate very high power to explain GII on the bases of the high coefficient of determination ( $R^2_{adj}$ ) for both N11 and G15. They are quite efficient equations due to the small number of variables that are identified as a result of stepwise regression. Above all, the two equations include different variables indicating that the level of achievement and the path to success is different for N11 compared to the more advanced *group* of G15 countries. High tech imports ( $\beta = .38$ ) and ICT access ( $\beta = .37$ ) exhibit equal importance but the most important variable in achieving a high GII is rule of law ( $\beta = .63$ ) based on the beta coefficients. It seems that rule of law provides the stable and supportive environment that is a prerequisite to obtaining the internal and external funds to conduct research, maintain the needed infrastructure and educate people. High tech imports and ICT access act as proxies for research and development inputs and the means to conduct research and dissipate it in the country. On the other hand, the less advanced N11 *group* require political stability for the same reasons G15 need and rely on rule of law. While they are important and related (corr. = .76 and .78) concepts, rule of law and political stability represent different stages of advancement where N11 must establish political stability to achieve rule of law. In fact, for G15, rule of law is more significant in explaining  $GII_{15}$  and  $R^2_{adj}$  is lowered when political stability is substituted into the equation. However, the more crucial requirement for increasing the level of innovation in N11 is increasing the level of R&D expenditures by both the government and business. A critical point for N11 to achieve their potential is, perhaps, to appreciate that political stability is more difficult to achieve than increasing R&D expenditures as well as being a prerequisite in most cases.

## 2.3 Discriminant Analysis Results

To further confirm the importance of the variables identified by the regression analysis, we conducted discriminant analysis. Seventy-three percent of N11 were correctly classified in addition to correctly classifying an impressive 93% of G15. When we used the five variables identified by the two multiple regression equations rather than all nine significant variables from Table 1, the hit ratio (73%) did not change for N11 but declined by only 6% to 87%. Naturally, including all 9 significant variables produced a better result in regrouping the countries, at least for G15. The informative analyses would be to examine the efficacy of the two variables (RDExpend and Polstability) associated with the regression analysis for N11 and the three G15 variables (Rulelaw, HiTechImports and ICTAccess) to regroup the two sets correctly. RDExpend and Polstability correctly classify 82% of N11 but yield a lower hit ratio of 73% for G15. We would expect that if the three variables are specially associated with G15, its hit ratio would be higher than the classification of N11 by the same variables. Indeed, the hit ratio for G15 is 93% but drops to 73% for N11. Hence, discriminant analysis reconfirms that different sets of variables are instrumental in explaining the current level of global innovation achievement by N11 versus the G15 countries. For the N11 to catch the G15 countries it seems HiTechImports and ICTAccess are important variables to improve. However, in our opinion, these two variables are easier to control and improve compared to rule of law, which is the third significant variable for G15. It takes much more than funding and technical

know-how to establish rule of law, especially among some of the N11 countries that have a long paternalistic and authoritarian tradition.

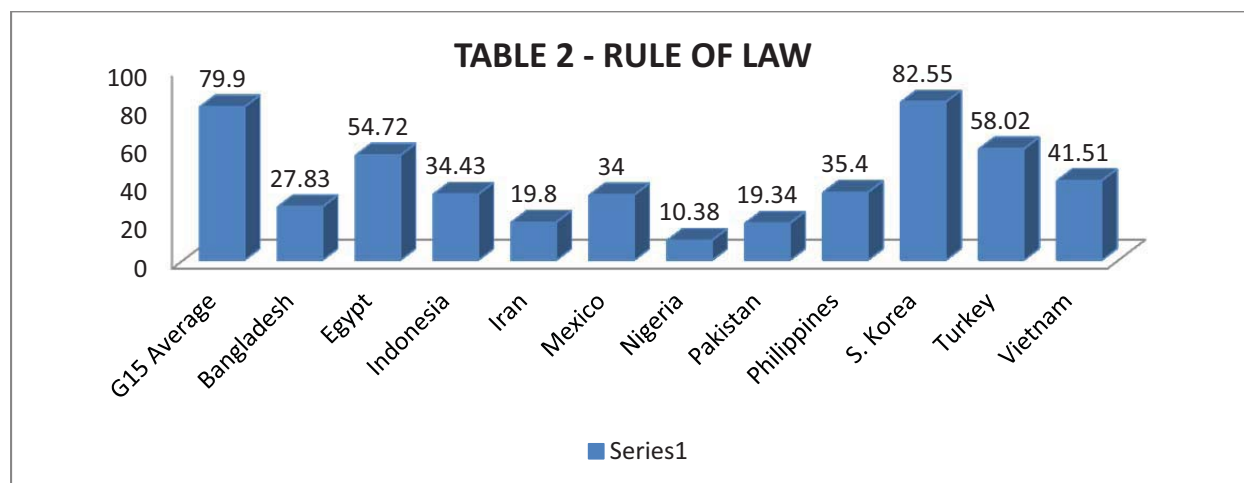
## 2.4 Political Stability and R&D Expenditures: N11 vs. G15

Bangladesh, Iran, Nigeria, Pakistan and the Philippines are significantly below the N11 average (20.46) in terms of political stability. Only S. Korea and Vietnam are around the G15 average (53.68). The G8 countries that include US, Japan, Canada, Germany, Italy, Russia and the UK have an average political stability score of 63.9 that makes it very difficult for N11 to make meaningful improvements along this dimension. There is, however, an opportunity to compete with Russia (21.70) and China (29.72) in terms of political stability and leverage it to move up the G20 ladder.

Notwithstanding the relative standings, closing the gap and making advances within G20 is relatively easier in R&D expenditures than political stability, which is far more complicated. Again, the average for N11 is significantly below the G15 average (Table 1). Iran, Pakistan and Turkey are around the group average of 12.9. S. Korea is the superstar in terms of R&D expenditures (65.8) as it is well above the G8 average (42.78) and is behind only Japan (70.6). R&D expenditures present a significant opportunity for S. Korea to advance its standing among G20 as predicted by Goldman Sachs if it maintains its current momentum. All the others need to take very significant steps to increase total R&D spending by having governments take a leadership role and motivating firms to allocate drastically more funds. A requirement to harvest the fruits of R&D expenditures is to spend money on education at all levels and encourage meaningful cooperation among university, private firm and government researchers.

## 2.5 N11 Faces Rule of Law, High Tech Imports and ICT Access

As a country moves closer to achieving the dream, it will have to compete with the G15 countries on their terms to catch and replace them. G8 have an average rule of law score (79.9) that is matched by only S. Korea (82.55), see Table 2. Turkey (58) and Egypt (55) occupy a promising position that should be helped by improvements in political stability. For the remaining N11, establishing rule of law presents a challenge based on their current scores of less than 41. Mexico (54) and S. Korea (50.4) have an advantage in terms of high tech imports and all that it represents as a proxy for innovation as they surpass the G8 average (36.60). Turkey (23.6) and Vietnam (28.1) have an opportunity to catch up provided they take the necessary steps. The remaining countries face a difficult obstacle to overcome based on scores that are below 15.



Finally, S. Korea (76) is ahead of the G8 (73) in terms of ICT access as an indication of its technical infrastructure and facilitating innovation through technology. Turkey (46.6), Vietnam (37.6), Mexico (34.8) and Iran (33.6) are in a better position than the other N11 countries but need to expand their ICT access almost at the same time as they increase their R&D expenditures. Clearly, many of these factors that require attention and hard decisions are related in terms of improvement that are needed in the short



run as well as when they make the progress that is predicted. S. Korea is in the best position among N11 to achieve the dream as it has a head start over the other countries (Table 2).

### 3. CONCLUSIONS

Goldman Sachs earmarked N11 to join the world's largest economies in the 21st century (Wilson and Stupnytska 2007). N11 have to make very crucial strategic decisions to achieve this promise that, even, Goldman Sachs labeled as a “dream”. Hence, assessing where N11 is today compared to the countries that they are expected to catch is important in terms of establishing benchmarks and identifying areas that require special attention. Analysis of the 12 selected variables comprising GII, indicate that the three dimensions where N11 is comparable to G15 are ease of starting a business, infrastructure and exports. Especially, the comparable level of infrastructure and ease of starting a business are very encouraging to allow N11 in narrowing the gap with the G15 countries. While the difference between the two groups is not significant in terms of exports based on volume (in US\$), further analysis indicated important differences in terms of the scope of the goods exported. The good news ends there as N11 are significantly behind G15 in the remaining nine areas. Political stability and rule of law in terms of social stability, R&D expenditures and collaboration in conducting R&D regarding technology and its impact on innovation capability are particularly disconcerting in terms of the ability to realize the “dream”. N11 countries must acknowledge these potential obstacles in their way if they wish to achieve their potential and replace some of the G15 countries. At this point, we acknowledge that there are important differences among the N11 countries and some of them are in a more advantageous position than other members of the group, such as S. Korea in terms of high tech imports and R&D expenditures that are much higher. Therefore, we recommend that a fruitful avenue for future research is to examine the status of the N11 countries individually to assess their potential to dislodge any of the existing G15 countries.

Multiple regression analyses is conducted to identify the areas that where the strengths and the weaknesses are paramount for each group of countries. More than any other factor, N11 need to establish or increase the level of political stability. This is a prerequisite before higher levels of R&D expenditures could increase the level of innovation and competitiveness in this *group* of countries. In the same vein, as a group G15 seem to benefit from high levels of rule of law whereby ICT access and high tech imports represent the innovation capability that elevate their level of achievement. Discriminant analysis confirms that the two groups require these different factors to correctly classify them in terms of innovativeness. N11 need to not just reinforce their existing areas of strength but emulate the best practices of the G15 in these selected areas.

Achieving the “dream” is not, at all easy for N11. Increasing the overall level of R&D spending is not a simple undertaking as it requires commitment and coordination between governments and the leading businesses in each country. Nevertheless, S. Korea has achieved this with some success and initiatives by governments in other countries would go a long way to produce positive results in terms of innovativeness. Political stability is a much more complicated matter and more difficult to achieve than finding funds to spend on R&D. For instance, Political Instability Index (PII) is based on factors that have been identified in the literature, such as inequality, history of instability, ethnic fragmentation, poor governance, a proclivity to labor unrest, the level of provision of public services and state ([http://viewswire.eiu.com/index.asp?layout=VWArticleVW3&article\\_id=874361472](http://viewswire.eiu.com/index.asp?layout=VWArticleVW3&article_id=874361472)). It will take more time, more determination and extends well beyond the economic, political and financial domains to include the social aspects of the environment in each country.

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## THE SPREAD BETWEEN “JONSE” PRICING AND HOUSING PRICING IN KOREA: AN OPTION PRICING MODEL EXPLANATION

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### ABSTRACT

*While “Jonse” is the major form of rental in the Korean housing market, no pricing model has yet been provided for it. It has only been viewed and accepted as an alternative for low income families who cannot afford to purchase a house. This paper provides a model that attempts to price “Jonse Money”. The model also suggests policy implications to the Korean government in its objectives to provide more affordable housing to moderate income families.*

**Keywords:** Korean Housing Market; “Jonse” Pricing, Housing Pricing, Pricing Spread, Pricing Model, Call Option, Subsidized Housing Market

### 1. INTRODUCTION

“Jonse” is a very unique housing rental agreement that only exists in Korea. It consists of the tenant paying a lump sum amount of money (Jonse Money, or “JM”) to the landlord at the beginning of the contract. At the maturity of the contract, the landlord reimburses the “Jonse money” to the tenant without interest. Contrary to a normal rental agreement that calls for a series of monthly payments, “Jonse” agreements require no monthly disbursement by the tenant. Note that the typical “normal” rental agreement also exists in Korea; however, “Jonse” dominates the Korean housing market. According to “Korean Housing Report (2000)” 66% of Korea’s rental housing consists of “Jonse” agreements. This percentage is much higher in urban areas; For example, 72% of rental is in the form of “Jonse” in Seoul, the capital city of Korea that holds close to 25% of Korea’s population.

Several studies conducted about the “Jonse” system viewed “Jonse” from the angle of Capital Market Imperfection and attempted to find relationship between the actual housing price and “Jonse” (Seo and Choi, 2005), (Hwang, 1990), (Im, 1995). One study finds the difficulties of getting mortgage loan a main reason for the existence of “Jonse” in Korea (Renaud, 1989). This idea is generally accepted and extended to posit that the landlord is the only one to benefit from housing appreciation, leaving the tenant (“Jonse” tenant) behind with no capital gains. Recent studies attempt to find why “Jonse” is necessary, and how to improve “Jonse” housing market (Lee and Koo, 2008), (Yoon, 2004), (Moon, 2005), (Woo, 2004), (Joo, 2004). All of these studies conclude that the “Jonse” system is a choice for the “poor” who cannot afford to pay the full price of housing, but only portions of the full price of the house they need.

However, this explanation is not consistent with the current trend of ownership in Korea. As shown in Table 1, the share of “Jonse” in the housing market has increased since 1975 in spite of a strong growth of the Korean economy and a significant number of Koreans achieving middle class status. If “Jonse” is the choice of the poor, then why do we experience this expansion of the “Jonse” system during the period of a strong Korean economy? Ownership declined from 64% to 54% while “Jonse” grew from 18% to 28% during the same period. This would indicate that ownership fell out of favor to the advantage of “Jonse”, or that in fact the Korean economy created relatively poorer people in real term, in spite of its growth and seemingly larger middle class during this time period. Is the “Jonse” system just a choice for the poor or does it meet some other economic needs.

Table 1  
**KOREAN HOUSING OWNERSHIP: 1975-2000**

Ownership Type	1975	1985	2000
Owned	63.6%	53.7%	54.2%
Jonse	17.5%	23.1%	28.2%
Rent	15.7%	19.1%	14.8%
Other	3.3%	3.6%	2.8%

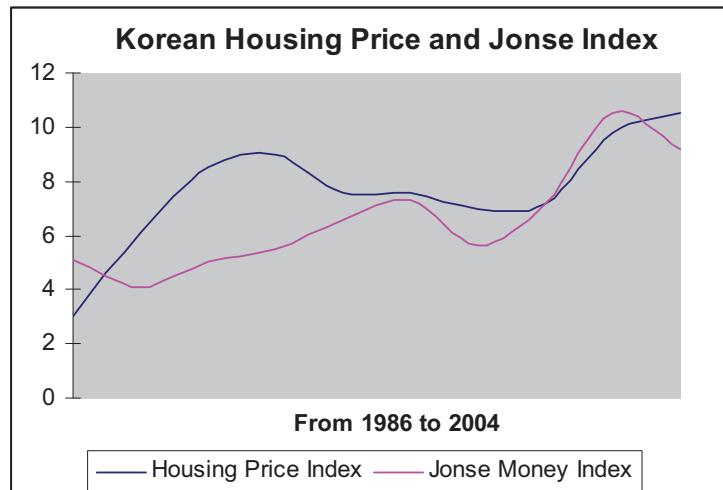
Source: Cha, Moonjung (2005)

## 2. THE SPREAD BETWEEN “JONSE MONEY” AND HOUSING PRICE

The Korean Housing market has been through wide fluctuations over time (Choi, 2004). From 1994 to 1997, housing price rose at the rate of 4.3% annually, while “Jonse Money” rose by 7.9%. From 1998 to 2000, housing price dropped by 10.3% annually, and “Jonse money” declined by 3.4%. Lastly, from 2001 to 2003, housing price appreciated by an annual rate of 14.1% *versus* a “Jonse Money” increase of 9% annually. The study shows a positive correlation between “Jonse Money” and housing price over time.

A study that used Granger Causality Test and different time period shows that “Jonse” price change causes housing price change more often than housing price leading the change (Seo and Choi, 2005). However, this conclusion is challenged by others. As shown in Table 2, “Jonse” shows different signs from housing price for two out of the four periods studied. Using the aggregate data from 1986 to 2004, another research finds that housing price change leads the change of “Jonse Money” (Cho and Im, 2004).

Graph 1



*Data provided by S. Choi (2004) "Analysis of Housing Price" published by Korean Construction Research Center.*

Table 2  
**AVERAGE RATE OF CHANGE OF HOUSING PRICE CHANGE AND JONSE MONEY: 1986-2005**

Time Period	Jonse Money Change Rate	Housing Price Change Rate
1986.1- 1990.12	1.17%	0.85%
1991.1 – 1997. 12	0.323%	-0.063
1999.1 – 2002.9	1.18%	0.62%
2002. 10 – 2005.9	-0.161%	0.284%

More intriguing than which market leads the price change in the other market, is the steady “wide” gap or “spread” between the housing price and “Jonse Money”. Historically, “Jonse Money” is “only” about 50 to 70% of the housing market price. It varies by area, however, it is a very well accepted norm in Korea that “Jonse” is less than the full housing price and therefore, more affordable, (Joo, 2004), (Chun, 2004) and (Lee and Koo, 2008). Even with this interesting or rather unusual observation, no one has yet attempted to find the “right” price model for “Jonse”. Perhaps it is because the “Jonse”-Housing Price relation has been as it is for so long that conventional wisdom accepts it as a fact of life. In the following sections of the paper we propose a theoretical framework that justifies the “Jonse”-Housing Price spread, and provides some guidance for policy implications in the housing sector in Korea.

### 3. “JONSE” PRICING MODEL

#### 3.1 Abnormal Gap in a Perfect Capital Market

As indicated earlier, “Jonse” is a long-term rental agreement of usually one or two years between landlord and tenant. The agreement can be renewed (with renegotiation of the “Jonse Money”) after each term. Under the “Jonse” system, the tenant pays “Jonse Money” in lieu of monthly rents to the landlord. At the end of the agreement, the landlord reimburses the “Jonse Money” to the tenant with no interest. As the “Jonse Money” usually amounts to 50-70% of the full housing price there exists a significant spread between the two. In a perfect capital market there should not be any spread; consequently, this gap remains one of the unique and not fully explained aspects of the Korean “Jonse”.

First, a simple economic model is used to illustrate the abnormality of the Gap. Let’s assume the followings:

H: Full Housing Price, Market Value of the House

R: Series of Rents that is paid to the Landlord under a normal Rental Agreement

T: Time to Maturity

i: Opportunity Cost (Interest Rate)

J: “Jonse Money” that is paid to the Landlord at the beginning of the Jonse Contract.

The value of the house, H should be the present value of the rental income collected by the landlord. Therefore,

$$H_0 = \sum_{t=0}^T R_t (1+i)^{-t} \quad (1)$$

The cost of renting the house is the forgone interest (opportunity cost) on the “Jonse Money” during the time period to the tenant. Therefore, the cost of the “Jonse” ( $A_0$ ), is :  $A_0 = J_0 \cdot i$ , and the value of the house is the present value of the forgone opportunity cost (Cost of Jonse)

$$H_0 = \sum_{t=0}^T J_0 i (1+i)^{-t} \quad (2)$$

If the market is complete and perfect, the value of the house should be equal to the present value of the opportunity cost of the house,  $H$  (Miller and Upton, 1976).

$$H_0 = \sum_{t=0}^T (H_t)^{-t} i H_t \quad (3)$$

Combining equation 2 and 3, we have

$$L_t = V_t$$

In other words, if the market is perfect, the “Jonse Money” should be equal to the Housing value. However, we observe a consistent gap between the two. We look into the Korean Housing Market with two different Pricing model to investigate this rather seemingly abnormal gap between Jonse Money and Housing Price.

### 3.2 Option Pricing Model with No Depreciation

We model the “Jonse” according to the Black and Scholes’s Option Pricing Model (B-S OPM) (Black and Scholes, 1973). Under the “Jonse” contract, the landlord receives the “Jonse Money” that he keeps for the contract period. The money is returned to the tenant at the contract’s maturity. When the landlord returns the “Jonse Money”, he gets the house back. This can be viewed as a call option given to the Landlord. Therefore, the value of the house can be written as the sum of the Jonse Money ( $J$ ) and the option (call) on the house with exercise price of  $J$ , and maturity of  $T$  (one or two year):

$$H_0 = J_0 + C(H_0, J_0, T) \quad (4)$$

where  $C(x,y,z)$  is the value of an European Call with underlying asset of  $x$ , exercise price of  $y$ , and maturity of  $z$ .

According to the B-S OPM we can write the value of the option that the landlord has on his “Jonse” contract as follows:

$$C = H_0 N \left\{ \frac{\left[ \ln \left( \frac{H_0}{J_0} \right) + \left[ t + \left( \frac{\sigma^2}{2} \right) \right] T \right]}{\sigma \sqrt{T}} \right\} - e^{-iT} J_0 N \left\{ \frac{\left[ \ln \left( \frac{H_0}{J_0} \right) + \left[ t - \left( \frac{\sigma^2}{2} \right) \right] T \right]}{\sigma \sqrt{T}} \right\} \quad (5)$$

where:

$N(\cdot)$  is a cumulative standard normal distribution function  
 $\sigma^2$  is the variance of housing price, and  
 $i$  is the risk-free interest rate.

The spread between “Jonse Money” and housing price can be viewed as the value of a call option. A partial derivative analysis of the call option will shed more light on the currently observed spread between “Jonse Money” and Housing price.

1. As the housing price rises, so does the spread.

$$\frac{\partial C}{\partial H} = N \left\{ \frac{\left[ \ln \left( \frac{H_0}{J_0} \right) + \left[ t + \left( \frac{\sigma^2}{2} \right) \right] T \right]}{\sigma \sqrt{T}} \right\} > 0 \quad (6)$$

2. As “Jonse” rises, the spread gets smaller.

$$\frac{\partial C}{\partial J_0} = -e^{-iT} N \left\{ \frac{\left[ \ln \left( \frac{H_0}{J_0} \right) + \left[ t - \left( \frac{\sigma^2}{2} \right) \right] T \right]}{\sigma \sqrt{T}} \right\} < 0 \quad (7)$$



3. As the maturity for renegotiation gets longer, the spread increases.

$$\frac{\partial C}{\partial T} = J_0 e^{-iT} \left\{ \frac{e}{2\sqrt{T}} N \left\{ \frac{\left( \ln\left(\frac{H_t}{J_0}\right) + \left[ t + \left(\frac{e^2}{2}\right) T \right] \right)}{e\sqrt{T}} \right\} + t N \left\{ \frac{\left( \ln\left(\frac{H_t}{J_0}\right) + \left[ t - \left(\frac{e^2}{2}\right) T \right] \right)}{e\sqrt{T}} \right\} \right\} > 0 \quad (8)$$

4. As the interest rate increases, the spread increases as well.

$$\frac{\partial C}{\partial i} = T J_0 e^{-iT} N \left\{ \frac{\left( \ln\left(\frac{H_t}{J_0}\right) + \left[ t - \left(\frac{e^2}{2}\right) T \right] \right)}{e\sqrt{T}} \right\} > \frac{\partial C}{\partial H_t} > 0 \quad (9)$$

5. As the variance of Housing price gets larger, so does the spread.

$$\frac{\partial C}{\partial e^2} = T J_0 e^{-iT} N \left\{ \frac{\left( \ln\left(\frac{H_t}{J_0}\right) + \left[ t - \left(\frac{e^2}{2}\right) T \right] \right)}{e\sqrt{T}} \right\} \frac{\sqrt{T}}{2e} > 0 \quad (10)$$

Thus, the partial derivatives of equation (5) reveal that the value of the spread between “Jonse Money” and Housing price increases with the increase of any element in the model except for  $J_0$ , the “Jonse Money”.

Equation 6) that suggests that an increase in housing value makes the value of the spread larger has a very important implication. It means that a greater potential for higher market prices coming from expected capital gain enhances the value of the call option. This has a direct policy implication for the Korean government whose objective is to provide affordable housing to low income families, since subsidized housing that have a potential for greater price appreciation would be purchased up front by the well to do, and be put back on the “Jonse” system. One mitigating aspect of this implication is that a high capital gains tax on houses may eventually lower the gap in the Jonse Market. It seems that the Korean government is trying to set a much higher capital gains tax on non-primary dwelling unit. Time will eventually tell whether and how the higher capital gain tax on non-primary dwelling affects the Jonse Market.

Equation (8) implies that the value of the spread will effectively increase when the contract period extends. This proposition could be tested following the extension of the customary Jonse maturity of 6 months to a mandatory one year by the Korean Government in 1980. There also exists currently a movement toward most of the “Jonse” contracts going from one year to two years.

Equation (9) examines the effect of inflation on the spread. Korea has been experiencing high inflation rate. Given a direct positive relation between interest rate and inflation, the value of the spread would increase over high inflationary periods. A time series data can test this hypothesis.

Equation 10) that implies that the value of the spread would increase with the volatility of housing price is a directly testable hypothesis using cross-sectional data. Using data from urban and rural areas separately, the cross-sectional test would show a bigger spread in urban area than in rural area since urban areas show more housing price fluctuation than rural areas.

### 3.3 Option Pricing Model with Depreciation

So far, we have assumed that there was no depreciation on housing units. If we assume that housing will depreciate at the rate of  $d$ , then the opportunity cost  $i$  becomes:

$$i = h + d \quad (11)$$

where,  $h$  is the return on investment in housing unit. The return on investment on housing unit must now include the depreciation,  $d$  over the maturity,  $T$ . The value of the call follows:

$$C = e^{-dT} H_t N \left\{ \frac{\left[ \ln\left(\frac{H_t}{J_0}\right) + \left[ t - d + \left(\frac{h}{a}\right) \right] T \right]}{\sigma \sqrt{T}} \right\} - e^{tT} J_0 N \left\{ \frac{\left[ \ln\left(\frac{H_t}{J_0}\right) + \left[ t - d - \left(\frac{h}{a}\right) \right] T \right]}{\sigma \sqrt{T}} \right\} \quad (12)$$

The partial derivative with respect to  $d$  is:

$$\frac{\partial C}{\partial d} = -T e^{dT} H_t N \left\{ \frac{\left[ \ln\left(\frac{H_t}{J_0}\right) + \left[ t - d + \left(\frac{h}{a}\right) \right] T \right]}{\sigma \sqrt{T}} \right\} < 0 \quad (13)$$

The negative partial derivative implies that the value of the spread will get smaller with a bigger depreciation rate, i.e., housing price falling. Conversely, when housing price shows negative depreciation rate i.e. capital gains opportunity, the value of the spread widens. A result that is consistent with observations in the underpriced/subsidized Korean Housing Market.

#### 4. CONCLUSION

This paper attempts to provide an explanation to the spread between “Jonse Money” and Housing price with the Option Pricing Model. The model explains the value of the spread as the value of a call option on the housing unit held by the landlord. It shows that an increase in the value of housing would lead to an increase in the value of that spread. The model concludes that Korean Housing market where the government attempts to provide affordable housing to low income families is “still” underpriced, thus providing opportunity for strong future capital gains on these subsidized housing. According to the OPM, strong capital gain implies greater value of the call option, thus good news for the call holder in the “Jonse” agreement, but not good news for the low income Korean who cannot buy housing. The implication of the model is that subsidized housing strengthens the “Jonse” system and helps the “Jonse” landlord who is a real estate investor, not the low income Korean that the government tries to help become a homeowner-dweller. In a hope to control the housing market, government launched a high capital gains tax on non-primary housing. It will be effective to tame the hike of housing market as well as the gap between Jonse Money and the Housing price. However, the tax on capital gain on non-primary housing will not be enough to foster homeownership for low income Koreans. Other complementary measures such as availability of credit, and regulation barring unfair competition from investment purchases must be considered if low income Koreans are to become owners of their housing. The OPM model also provides testable hypotheses that could be pursued in future empirical research in order to help shed more light on this unique Korean Housing market feature that the “Jonse” system is.

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# THE EFFECTS OF REFERENCE DISCIPLINES ON TECHNOLOGY ADOPTION RESEARCH

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## ABSTRACT

*Technology adoption is an important area of information systems research that has benefitted from other disciplines. A discipline is a body of knowledge with distinguished procedures, methods and concepts (Grigg, 1999) producing conditions for accumulation of knowledge (Harriss, 2002). Different disciplines have different concepts and may use different methods, and disciplines can benefit from each other by borrowing concepts and building on them. This paper uses qualitative and quantitative methods to discover the reference fields of technology adoption and it aims to show what fields have been heavily utilized and what other fields remain that research in technology adoption can benefit from. The two different methods used gave complementary results naming the fields of General Management, Psychology, and Marketing as the top reference disciplines of technology adoption research. Recent research in technology adoption borrows concepts from the literature on uses and gratification and from the literature on education as well and shows that there are still resources to tap into. Several reference fields remain underutilized and some research questions remain unanswered.*

**Keywords:** Technology Acceptance, Technology Use, Mixed Methods, Citation Analysis

## 1. INTRODUCTION

Research in technology adoption and use has been a main stream of management information systems (MIS) research for over two decades. Researchers have addressed this sub-stream of the MIS research in articles, books, and conferences both in support of other research areas, such as system development or knowledge management, and on its own.

The main research question that this paper seeks to answer is the following: What reference disciplines form the support pillars of technology adoption research? This research question is bi-forked. First, this question is important because it brings to the foreground the main reference disciplines supporting technology adoption research. Second, by answering this question we get one step closer to reaching untapped resources represented by other disciplines that can become references. Moreover, by pointing out possible untapped reference disciplines, the potential for research becomes great. To address this question I have followed two paths, one qualitative and another quantitative. Over one hundred articles related to technology adoption research formed the basis of this study and the analysis provided results that help us understand how research in this area advanced. The use of this mixed methods approach allows for triangulation and complementation of results (Greene, Caracelli and Graham, 1989).

Research in technology adoption has reached such a mature state (Venkatesh, Davis and Morris, 2007) by borrowing concepts and theories from certain disciplines that enriched it and carried it forward for over thirty years. To be able to talk of reference disciplines, it is necessary to note what a reference discipline is. Thus, the body of this article starts by commenting on reference disciplines, followed by a review of technology adoption and then the methodology section for qualitative and quantitative work done. After that, the results of the qualitative and quantitative work are presented in separate sections. The paper ends with suggestions for future directions, limitations of this work, and a conclusion.

## 2. DISCIPLINES AND REFERENCE DISCIPLINES

A discipline is a body of knowledge with distinguished procedures, methods and concepts (Grigg, 1999). It encompasses a specific system of tools, reproduced through training, for studying the related subject matter (Harriss, 2002). A discipline produces conditions for accumulation of knowledge and is hence productive and helps deepen our understanding of the social and physical worlds (Harriss, 2002). For example, the IS discipline encompasses the design and usage of information systems in organizations

(Keen, 1980). As Neufeld et al. (2007) showed, and depending on the perspective taken, the identity of a discipline does not have to remain static, but may change and evolve over time.

Research in any discipline can advance by making use of theories and concepts discovered by that discipline. However, because of their high degree of specialization, disciplines usually develop blind spots and methodological limitations (Carolan, 2008; Hulme and Toye, 2006; Kuhn, 1970). To avoid that, research can expand the boundaries of that discipline by borrowing theories and concepts from other fields of research to shed a new light and give a different perspective on what is happening in their field.

A reference discipline is one that provides theories and concepts to another. This definition is far from being complete. Other researchers have attempted to define how a field can be considered a reference discipline to another and have reached the conclusion that it is not a straight forward task (Westin, Roy and Kim, 1994). A reference discipline is one that is “extensively cited” by the referencing discipline (Wade, Biehl and Kim, 2006). Another definition provided by Wade et al. (2006) is that a reference discipline is one that provides conceptual foundation to another field. These three definitions bring us closer to understanding what a reference discipline is.

This paper does not aim to provide a better definition of reference disciplines and will take both definitions provided by Wade et al. (2006) to work towards researching the reference disciplines of technology adoption. For that purpose, I conducted a qualitative analysis of forty-two technology adoption articles to discover the reference disciplines providing the conceptual bases of technology adoption research. To address the quantity of referencing done, a quantitative citation analysis of seventy-five articles in the stream of technology adoption research, chosen from the Basket of Six IS journals (MISQ, JAIS, ISJ, ISR, JMIS, and EJIS) is carried out to discover the reference fields ‘extensively cited’ by technology adoption articles. Citation analyses have been executed before by IS researchers (e.g. Culnan and Swanson, 1986) for the purpose of exploring reference disciplines.

### **3. TECHNOLOGY ADOPTION**

Technology adoption occurs when a person or group decide upon, acquire, and start using a specific technology for hedonic or business related purposes. Technology adoption research is also called ‘technology acceptance and use’ research because it combines studies about accepting to use technology (e.g. Hu, Chau, Liu Sheng and Tam, 1999), resistance to technology (e.g. Marakas and Hornik, 1996), and continued use of technology (e.g. Karahanna et al., 1999). This field has been studied since the beginning of information systems research in the early 1970’s. However, the earliest most memorable work for many IS scholars would be that of Davis (1989), which introduced the Technology Acceptance Model - TAM.

According to Fichman and Kemerer (1999), companies sometimes acquire new technology but fail to deploy it completely. This creates a gap between technology acquisition and technology usage that may lead to erroneous judgments about the diffusion process, where companies may be led to believe that the technology use is pervasive when it is not. This paper does not separate between initial adoption and continued use; it focuses on the resources from which the literature borrows. Factors that affect user adoption of a certain technology include the perceived usefulness of that technology, its perceived ease of use, its compatibility with existing software, previous experience with the technology, its visibility, and others (Davis, Bagozzi and Warshaw, 1989; Rogers, 1995). And, the characteristics of the individual, such as age and gender, can affect the adoption decision as well (Venkatesh, Morris, Davis and Davis, 2003). Other factors and different approaches to the study of technology adoption are listed on the following pages and a link to the referenced disciplines is established.

This sub-field has been at the heart of information system research since the beginning because researchers wanted to know what makes users accept a certain system and start using it while shying away from others. User adoption is probably the most important part when we consider information systems. Simply put, there would be no use of information systems unless users adopt them. On the issue of relevance to practitioners (Benbasat and Zmud, 1999; Keen, 1991), this topic is of high relevance because it deals with employees’ adoption of information technologies, which could lead to better



performance (Melville, Kraemer and Gurbaxani, 2004). And research in user adoption has led us to understand that a system that is not accepted by users is likely to fail (Markus and Tanis, 2000). Moreover, on the issue of relatedness to the core of IS (Benbasat and Zmud, 2003); this field deals with the IT artefact and the employees reactions and use of it. The adoption of any information system or technology is the adoption of the core IT artefact. Although research related to adoption draws from different disciplines, the target concept, or dependent variable, is adoption of *technology* and thus, it is at the core as defined by Benbasat and Zmud. If the core is differently defined as the few important topics that are researched often, then adoption is one of them.

As regards the issue of relatedness to the identity of the IS field (Agarwal and Lucas, 2005; Neufeld, Fang and Huff, 2007), the technology adoption research area has been within IS for a long time, has been researched extensively, and draws high interest from IS scholars and practitioners. Technology adoption research has become part of the everlasting, though changing, identity of IS research.

#### 4. METHODOLOGY

Finding the reference disciplines can be done in several ways. For example, one can search the literature for similar studies to deduce the situation of the field. Another method is to read technology adoption articles and analyze them qualitatively. A third method is to do citation analysis on the references used by technology adoption articles, like the one used by Grover et al. (Grover, Ayyagari, Gokhale, Lim and Coffey, 2006) to study the reference disciplines of MIS.

After searching the literature I was unable to find research articles dealing with reference disciplines for technology adoption, though there are articles dealing with reference disciplines of MIS (e.g. Culnan and Swanson, 1986; Grover, Ayyagari, Gokhale, Lim and Coffey, 2006). Since the first method was not fruitful, qualitative and quantitative methods were chosen to carry on with the research. I chose to do both qualitative and quantitative types of research because the different approaches provide different insights into the area under study. The information provided separately by qualitative and quantitative analyses is important for understanding technology adoption research as a whole, and such “mixed methods research represents the real ‘gold standard’ for studying phenomena” (Onwuegbuzie and Leech, 2004). Using a mixed methods approach allows for confirmation (through triangulation), clarification, development (from one method to the next), discovering contradictions, and expansion of the research (Greene, Caracelli and Graham, 1989).

I used Web of Knowledge, Google Scholar, and Scopus to find technology adoption articles and compare their characteristics. I started with a few articles that were in my hands, and to avoid bias in the selection process, I randomly chose articles returned in query results. The queries were directed towards technology adoption or technology acceptance articles in the Basket of Six IS journals, and separate queries were run for the qualitative and quantitative studies. The result is that the analysis contains 105 articles, with 42 of them analyzed qualitatively and 75 analyzed quantitatively. Twelve articles overlapped since I ran the queries separately for the different studies.

The two research methods proceeded differently. To conduct qualitative analysis I read the articles and extracted the theories and main concepts used. I searched for the disciplines that these theories belong to, and I often used several internet sources to find the beginnings of a theory. After that I grouped the theories stemming from each discipline and deduced that technology adoption research uses specific disciplines as references. On the other hand, to conduct quantitative analysis I used the reference list of each article. The total number of citations in the 75 articles randomly selected for quantitative analysis is over 4400 (Minimum 26, Maximum 154). These citations were mapped into research areas such as MIS, general management, marketing, psychology, and others depending on the publication (book, journal, etc.) that they refer to (see complete list in Appendix A). To map the publications to their corresponding subject areas, the publishers’ websites on the Internet (e.g. Sagepub.com), Scopus, and websites providing specialist journal classification (e.g. aaisnet.org) were used. The table showing which subject areas were mapped to which research areas is shown in Appendix A. Some of the citations, like company reports, newspapers, magazines and general books, could not be mapped into specific areas. These totalled 159 references (3.5%) and were discounted from the analysis. Citations were summed by



referenced journal for each article. Then the journals were mapped and the numbers added up. For example, if article A referenced 3 articles in ISR and 2 articles in AMJ, and article B referenced 2 articles in ISR and 1 article in AMJ, then the journals were mapped to MIS and 'general management', respectively, and then the numbers were added up to get 5 for MIS and 3 for general management.

One difference between the methods used in this study is that qualitative analysis brings out the disciplines used by researchers to develop ideas or theories in technology adoption research, while citation analysis is less concerned with the use of a source, and it brings out the amount of referencing done to each discipline regardless of why that referencing was done. This might be a limitation of citation analysis, but the effect of this limiting characteristic is reduced by 1) pairing it with qualitative research, and 2) using rankings of reference disciplines rather than just highlighting them. High rankings in this study shows that a discipline is extensively cited by articles in MIS top tier journals, and as thus, the citations have to be meaningful to a good set of prominent MIS researchers; otherwise, those researchers would not have used them.

## **5. QUALITATIVE ANALYSIS OF REFERENCE DISCIPLINES**

The qualitative research in these paragraphs focuses on the origins of theories, models, and concepts used by technology adoption articles. And the initiating disciplines of these concepts are mentioned as reference disciplines in this analysis. Only a sample of the articles analyzed is shown here and the results of the analysis are provided in the table that follows. There are hundreds of research articles and books about technology adoption. It would be a great task to comment on all of them. However, some of that work tests theory or repeats experiments and, accordingly, a sample of 42 articles should provide a good set of concepts and theories borrowed and a good set of reference disciplines to show how the field benefitted from them. Because the aim is to discover reference disciplines, I do not delve into the details of these studies and I comment briefly on the concepts borrowed and their initiating disciplines.

From its inception, technology adoption research has borrowed from other disciplines. The basic TAM model (Davis, 1989), upon which probably half of the technology adoption research is based, actually borrows from psychology the theory of reasoned action (TRA) (Benbasat and Barki, 2007; Fishbein and Ajzen, 1975). TAM was later expanded into TAM-2 (Venkatesh and Davis, 2000). As the work in psychology moved from TRA to the theory of planned behaviour (TPB), so did work in technology adoption with Taylor and Todd (1995). The work on computer self efficacy, which started around the same time (Compeau and Higgins, 1995), also borrows from psychology the 'social cognitive theory' (Bandura, 1977). Compeau and Higgins (1995, 1995) and later Compeau et al. (1999) did a series of studies related to computer self-efficacy and the use of social cognitive theory in technology adoption and use. They found that computer self efficacy, which refers mainly to a person's beliefs about his or her abilities with computers, has a huge effect on user expectations, emotional reactions, and use of technology. High self-efficacy was found to be associated with higher use of computers, higher enjoyment and lower computer anxiety. The Technology-to-Performance Chain (Goodhue and Thompson, 1995), better known as task-technology fit model, is yet another model that attempts to explain the adoption of technology by users. This study adds affect and habit (psychological constructs) and other individual characteristics to the literature, some of which have also been studied in computer self efficacy. Agarwal and Karahana (2000) took a holistic view of how individuals interact with computer technologies. They used the concept of cognitive absorption from psychology, defined as the state of deep involvement with software, and tested it as an antecedent to beliefs of perceived usefulness and ease of use. Bhattacharjee (2001) developed a model for IS continued use rather than acceptance, adapting expectation-confirmation theory from consumer behaviour literature and integrating prior IS research. He found that users' confirmation of expectations has a big effect on user satisfaction, which affects continued use of technology.

With respect to ERP systems adoption, Hwang (2005) researched cultural control, self-control, uncertainty avoidance and perceived enjoyment to study their effect on ERP adoption. These concepts come mainly from sociology and psychology. The author found that uncertainty avoidance, cultural control and intrinsic motivation are important antecedents of ERP systems adoption. In the same line, Wakefield and Whitten (2006) explored the effect of intrinsic motivation, a psychological construct, on the use of

mobile devices and found that cognitive absorption and user playfulness impacted beliefs greatly and the hedonic orientation of the technology maximized its use. Walden and Brown (2009) took a different route, they used information cascade theory, based in social learning theory from psychology (also used by Marakas et al., 1998), together with network effects theory from economics, to explain what they called the 'herding behaviour' of people towards technology adoption. According to the authors, people adopt technology 'en masse', hinting to the huge social influences on technology adoption.

In conclusion, this analysis shows that the field draws on, to different degrees, theories and concepts from several fields. The results of this analysis are grouped in Table 1, showing the reference field, a sample of the concepts borrowed, and sample IS studies that have used that concept or theory in technology adoption research.

**TABLE 1: REFERENCE DISCIPLINES OF TECHNOLOGY ADOPTION RESEARCH**

Field	Sample Concept Borrowed	Sample IS Adoption Research
Psychology	Theory of Reasoned Action Social Cognitive Theory Theory of Planned Behaviour Personality Individuality Affect and Habit Cognitive absorption Commitment Uncertainty avoidance, perceived enjoyment Intrinsic motivation	(Davis, 1989) (Compeau and Higgins, 1995) (Taylor and Todd, 1995) (Devaraj, Easley and Crant, 2008) (Venkatesh, Morris, Davis and Davis, 2003) (Goodhue and Thompson, 1995) (Agarwal and Karahanna, 2000) (Brown, Massey, Montoya-Weiss and Burkman, 2002) (Hwang, 2005) (Wakefield and Whitten, 2006)
Sociology	Social Learning Theory Information Cascade Theory	(Marakas, Yi and Johnson, 1998) (Walden and Browne, 2009)
Economics	Cost, Income Network effects	(Kim and Song, 2009) (Walden and Browne, 2009)
Innovations	Perceived Characteristics of Innovations	(Moore and Benbasat, 1991)
Marketing	Expectation Confirmation	(Bhattacharjee, 2001)

## 6. QUANTITATIVE ANALYSIS AND RESULTS

The citations in the 75 randomly selected technology adoption articles resulted in 4296 valid references. After mapping the valid 4296 citations, they were totalled, analyzed, and turned into pie charts showing the percentage of contribution of different disciplines to the advancement of technology adoption research.

The analysis, shown in Table 2, provides a good idea about the reference disciplines of technology adoption research. Table 2 provides citation analysis of the total valid citations and shows that about 46% of the total citations come from within the MIS discipline itself. The second largest group of citations references the psychology discipline (15%) with general management being close by at (13%) followed by marketing (8%) and research methods and statistics (5%). Research methods and statistics were not considered a separate discipline and were both referred to as 'Research Methods'. These results show that technology adoption research depends on reference disciplines and has achieved this level of knowledge accumulation by borrowing theories and concepts from these reference disciplines.

If we look at business areas, we see that 70% of the total citations come from business disciplines, showing a big dependence of technology adoption research on business theory and concepts. In addition, candid in this analysis, half of the non-business citations (15%) come from the discipline of psychology.

**TABLE 2: PERCENTAGE OF CITATIONS**

Organizational Behaviour	2%	Economy	2%	Engineering	1%
General Management	13%	Education	1%	Psychology	15%
Finance	1%	Innovation	1%	Systems theory	<1%
Research Methods	5%	Sociology	3%	MIS	46%
Medical Sciences	2%	Marketing	8%		

If we consider external citations only, i.e. if we remove MIS and its 46% representation, then almost one of every three articles cited is a psychology publication, and every fifth article cited is a general management one. If we look at the group of business disciplines, we see that 44% of the external citations come from within the business areas, namely organizational behaviour, marketing, finance, and general management  $[(2+8+1+13)/(1-46)]$ . Thus, a different perspective is that the top three external reference groups are business (44%), psychology (29%) and sociology (6%).

## 7. FUTURE OF TECHNOLOGY ADOPTION RESEARCH

Despite the advances in understanding technology adoption and diffusion, and despite all the hard work put forward by IS researchers, there is still much to discover in technology adoption. When Venkatesh et al. (2007) said that individual level adoption of technology is one of the most mature streams of research, they probably did not mean that research in this area is done. Work in the area of IS adoption is not over yet; researchers like Phoebe Tsai (2009), Evan Straub (2009), Sanghyun Kim and Youngmi Song (2009), and many others are using different perspectives trying to understand and develop more elaborate models for explaining and predicting the elements that affect the adoption of technology.

More research is needed in the areas of individual technologies, similar to the one carried by Kim and Song (2009) about the adoption and use of Blueberry. There is a multiple of technologies out there that have different characteristics, what makes one succeed and another fail? What are the cognitive, emotional, and contextual concerns (Straub, 2009) associated with that technology? Also, the adoption of wireless technology has not been fully researched yet. I believe this also brings out the issue of technology adoption inside the firm versus outside the firm, how do they differ and how can organizations take advantage of that?

Another area where more research is needed is technology adoption in different cultures. Srite and Karahanna (2006) and few others have researched this area, but McCoy et al. (2007) warn of using technology acceptance models across cultures without rigorous testing. The research of Pedersen and Ling (2003) also shows the need to develop different adoption models depending on the particular user segment being studied. This suggests an interaction between the particular technology and culture; perhaps an expansion of the concept of organization-system interaction proposed by Markus (1983).

Yet another area where research is lacking relates to adopting a technological concept, rather than a device or software – like adopting cloud technologies for example. Some related questions are the following: What are the factors there considering the various mix of technologies involved? Do we need a different adoption model for this service (Pedersen and Ling, 2003)? Should this adoption be totally explained by firm level theories? Or are there other factors like the propensity of managers to take risk? Which leads us into psychological, sociological, and decision making research.

Since we are unable to predict user behaviour towards technology, maybe we need to borrow insight from other fields, as in the works of Pederson and Ling (2003) and Straub (2009). The research of Pederson and Ling (2003) brought together perspectives from ‘uses and gratifications research’, which has its foundation in media and communication theory, and ‘Domestication research’, which has its foundation in sociology. Maybe this line of research would be complementary to research on hedonic information systems. In addition, Straub (2009) used the concerns based adoption model (CBAM), with origins in teaching and education, together with TAM and UTAUT to explain how individuals construct unique

perceptions of technology that affect their decisions to adopt technology and learn its use. Perhaps this research could add to research on technology in education.

## **8. LIMITATIONS**

This work uses two approaches to studying technology adoption research. It provides a history of technology adoption and analyzes over a hundred articles to discover the reference disciplines for this research stream. One of the limitations is that this research depended on articles published in the Basket of Six, and as thus, it is inherently limited to topics and research articles of interest to these journals. Other technology adoption research published in other high quality MIS journals has not been included.

Another possible limitation could be the randomness of the samples used for analysis. While this method provides an overview of the technology adoption field, some researchers might consider choosing key technology adoption articles a better choice. However, I wanted to avoid introducing bias and I chose to use random sampling, which also led to having twelve articles in common between studies selected for qualitative analysis and those selected for quantitative analysis.

One more limitation may relate to using reference lists to deduce reference disciplines. Unfortunately, by using reference lists it is not possible to know how these references were used in the article. Although this is a shortcoming, citation analysis has been used before in MIS to study reference disciplines (see Grover, Ayyagari, Gokhale, Lim and Coffey, 2006; Wade, Biehl and Kim, 2006). Moreover, this method has been used here for the completeness of the research, and as a complement to the qualitative work done. Also, the use of rankings and randomly selecting articles from the Basket of Six circumvents this shortcoming to a large degree.

## **9. CONCLUSION**

Technology adoption research focuses on why people accept to use technologies. This field started in the early 1970s as researchers attempted to understand user behaviour towards technology. And technology adoption research has benefited much from other fields that helped in creating and expanding different models and approaches to the study.

This article showed the results of a qualitative analysis of 42 technology adoption articles and the quantitative analysis of 75. The results of the two analyses have been complementary and show large agreement though they are of different nature. The use of general management ideas was not apparent in the qualitative search for concepts and theories used, and was brought forward by the quantitative analysis done, which also shows the strength of the mixed method approach. The final results are that the disciplines most cited by technology adoption researchers are general management, psychology, and marketing, and each of them has contributed differently to the advancement of the field.

With changing technologies and the creation of new products every day, technology adoption research is still in demand as we try to understand the decision making process of individuals and the technology related factors, as well as individual characteristics, that affect these decisions.

Reference disciplines have enriched technology adoption studies and helped explain and predict user behaviour regarding old and new technologies. When research in an area gets focused too much on any one line of reasoning, like the line of reasoning set by Davis (1989), then there is danger that other lines of reasoning might be ignored. Fortunately, technology adoption research was exposed to several disciplines and perspectives, so it is not one sided. But perhaps researchers have overlooked research in interventions to technology adoption and alternative theoretical perspectives as Venkatesh et al. (2007) suggest.

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## APPENDIX A

Publishers' websites, specialist journal articles, and Scopus publication categories were used to map the subject areas or publications to research disciplines as per the following:

**TABLE A1: MAPPING OF SUBJECT AREAS TO DISCIPLINES**

Subject Area of Publication	Mapped to	References Found
Personality	Psychology	662
Stress		
Cognition		
Behaviour		
Economics	Economics	83
Finance	Finance	25
Stock market		
Banking		
Systems and control	Systems Theory	10
Accounting	Accounting	4
Innovation	Innovation	56
Research Methods	Research Methods	209
Statistics		
Statistical tools		
Measurement theory		
IEEE	Engineering	37
Engineering		
Health	Medical References	65
Patients		
Medicine		
Nursing		
Information systems	MIS	1988
Information technology		
Information management		
Family and marriage	Sociology	145
Culture		
Public policy		
Organizations	General management	557
Administration		
Ethics		
Leadership		
Marketing	Marketing	343
Retailing		
Consumers		
Advertising		
Education	Education	43
Organizational behaviour	Organizational behaviour	73
Magazines	Not Mapped	
Newspapers/ reports		
Generalist publications		
General conferences		

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## **CORPORATE GOVERNANCE CODES IN EU: A DIFFERENT APPROACH FROM DISCLOSURE PERSPECTIVE**

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### **ABSTRACT**

*The purpose of our empirical study is to divide corporate governance codes currently enforceable in European Union member states into disclosure groups by considering the level of transparency required in relation to OECD principles' recommendations. In addition, our paper is aimed to identify possible relationships between disclosure groups thus created and the level of transparency ensured by considering codes' issuer type and countries' legal regimes, as these have been defined in prior related literature.*

*The research methodology used, appropriate for such empirical studies, is based on correlations' analysis, making use of econometric tools using SPSS software. The results of the performed analysis show that the disclosure level of our groups is strongly correlated with findings related to codes' issuer type, while not all countries' legal regimes previously defined proved to reach to conclusions similar with ours.*

**Keywords:** Corporate governance, Disclosure, Transparency, European Union

### **1. INTRODUCTION**

Corporate governance has become one of the most controversial topic of worldwide interest, since the latest economic scandals arose, thus leading to the financial crisis that spread all over the world. Consequently, it became one of the most attractive, dynamic and challenging research subject, too.

The lack of transparency and disclosure was often considered as one of the major cause of the latest corporate scandals and governance failures. Accordingly, many changes have occurred at regulatory level, in the last decades, leading to various types of surveys focused on it. Most of them analyzed corporate governance frameworks as a whole, being mainly focused on comparing these with the Anglo-Saxon system of corporate governance, often appreciated as a model in this respect. There have been also studies conducted considering as a term of comparison various provisions issued by well-known international legislators, like European Commissions. All of these had in fact the same purpose – to identify possible convergences of corporate governance systems across countries.

### **2. AIM OF THE STUDY AND RESEARCH METHODOLOGY**

Our empirical study, that approaches corporate governance from regulatory perspective, too, by analyzing all codes currently enforceable at European Union level, has two main goals focused on transparency and disclosure provisions settled by these, thus being more comprehensive in these respect than prior related research focused on the same topic, ensuring as well originality to our paper. The first one is to define particular disclosure groups according to the level of transparency required and to classify all analyzed codes into these clusters. Our second objective is to identify possible correlations between the disclosure groups thus created and the level of transparency ensured by these, when considering either codes' issuer type or the legal regimes of the countries where these are in force, as these were defined in prior literature. The research methodology used for achieving our goals, mainly based on various mathematical and statistical tools (descriptive statistic and correlations) is presented in detail in the chapter dealing with the empirical design and results.

### **3. LITERATURE REVIEW**

Corporate governance codes have been the subject of many studies, most of them looking for the best model toward all these might converge. A critical review focused on convergence of corporate governance (Yoshikawa and Rasheed, 2009) tried to offer some answers to the main dilemmas concerning this convergence, also highlighting future research directions. Thus, generally, these codes

have been analyzed as a whole, by referring mostly to the Anglo-Saxon model of corporate governance, often used as a term of comparison (Coffee, 1999; Goergen and Renneboog, 2008) and sometimes even appreciated as “the winner” (Hansmann and Kraakman, 2004).

Prior theoretical studies that used regulatory frameworks for comparison reveal that “there does seem to be convergence on certain common core principles based usually around the OECD Principles of Corporate Governance” (Mallin, 2004), mainly due to the common elements introduced in major European regulations, as well as to the similarities in forthcoming legislation of the European directives (Wymeersch, 2002). On the other hand, the majority of the codes of the European Union countries are not in full accordance with the priorities of the European Commission (Hermes, et al., 2006).

Besides these theoretical approaches, there have been some attempts in conducting empirical studies on this topic, in the latest years, providing comprehensive comparison analysis (Siems, 2009; Martynova and Renneboog, 2010), using various research methodologies, like “Leximetrics” (Lele and Siems, 2007; Siems, 2008) or “Latent Semantic Analysis” (Cicon, et al., 2010).

All these studies offer us outlooks for other empirical analysis on the same topic, as well as for comparative analysis between findings.

#### **4. CORPORATE GOVERNANCE CODES - EMPIRICAL ANALYSIS OF “DISCLOSURE GROUPS”**

Basing on these background, we approached corporate governance from regulatory perspective, too, by using a different international guidance in this respect – the OECD principles of corporate governance, focusing on a particular topic - concerning transparency and disclosure requirements settled through issued codes. Consequently, we decided to classify corporate governance codes analyzed into different “disclosure groups”, wondering as well if there is any link between these and those defined in prior literature considering other criteria.

##### **4.1 Hypothesis development**

Searching for an answer to our research question, we formally stated the following *two hypothesis* in order to individually test the correlations assumed:

*H<sub>1</sub>: There is a relationship between disclosure groups created and issuer's type defined in prior literature.*

*H<sub>2</sub>: There is a relationship between disclosure groups and countries' legal regimes previously defined.*

##### **4.2 Sample selection and variables' description**

For achieving our goal we selected a sample of countries, made of all 27 European Union member states, whose corporate governance codes currently in force are available on the website of the European Corporate Governance Institute - an international scientific non-profit association promoting best practices on corporate governance issues, which was the main source of information for our research.

For performing the comparative analysis with related research findings we considered one dependent variable revealing the level of disclosure and transparency in corporate governance codes compared with OECD requirements for each disclosure group developed, and two independent variables defined considering prior literature (Cicon et al., 2010; La Porta, et al., 1997).

The *dependent variable* (Avg.D&T S\_Index) is the average value of disclosure indices for each disclosure group created, which are the result of our own development, the data needed and the methodology used being detailed in the next chapter. The disclosure indices considered for determining Avg.D&T S\_Index are represented by the Jaccard's similarity coefficients established for each corporate governance code, revealing the degree of similitude between them and OECD principles as regards the compliance with disclosure and transparency requirements and recommendations (Ștefănescu, 2011).

The *independent variables* are:

- *IT (Issuer Type)*, the following four identities being considered: “Composite”, made of groups that contain representatives from at least two of the subsequent groups, “Government”, referring to national legislatures or governmental commission/ministries, “Exchange”, represented by national stock exchanges and “Industry”, referring to industry or trade associations and groups, as in prior related literature (Cicon et al., 2010);
- *LR (Legal Regime)*, in this respect being used classifications made by both La Porta, et al. (1997), who distinguished between “Common law”, “German civil”, “French civil”, “Former socialist” and “Scandinavian civil” (values assigned to variable LR<sub>1</sub>) and Cicon et al. (2010), who introduced two

new legal regimes (“Baltic civil” and “Global governance practices”) instead of “Former socialist” and “Scandinavian civil” (values assigned to variable LR<sub>2</sub>).

Table I comprises the values assigned to all independent variables, considering the importance of each one in terms of disclosure, according to prior literature findings:

**TABLE I – SCORES ASSIGNED TO EACH LEGAL REGIME AND TYPE OF ISSUER**

LR <sub>1</sub>	Score	LR <sub>2</sub>	Score	IT	Score
Common Law (CL)	5	Common Law (CL)	5	Composite (C)	4
French civil (F)	4	German civil (G)	4	Exchange (E)	3
Former Socialist (FS)	3	Baltic civil (B)	3	Government (G)	2
German civil (G)	2	French civil (F)	2	Industry (I)	1
Scandinavian civil (S)	1	Global Practices (GP)	1		

#### 4.3 Disclosure groups development – data and methodology

For developing the disclosure groups, we considered the following intervals of values for D&T S\_Index:

**TABLE II – INTERVALS FOR DEVELOPING DISCLOSURE GROUPS**

D&T S_Index	>0.6	(0.5 – 0.6]	(0.4 - 0.5]	(0.3-0.4]	(0.2-0.3]	<0.2
Disclosure group	VHL	HL	ML	LL	VLL	IL

Consequently, we divided our sample of corporate governance codes according to their disclosure indices into six different groups revealing a level of disclosure from “very high level” to “insignificant level”. The distribution of corporate governance codes into the disclosure groups thus created are presented in Table III, together with the average values of disclosure indices calculated for each group (Avg.D&T S\_Index) and the average scores for the independent variables, revealing the level of disclosure depending on codes’ issuers type (IT) and countries’ legal regimes (LR<sub>1</sub> and LR<sub>2</sub>).

**TABLE III – DISTRIBUTION OF CODES ACCROS DISCLOSURE GROUPS**

Disclosure Groups		Countries	D&T S_Index	Avg.D&T S_Index	LR <sub>1</sub>	LR <sub>2</sub>	IT
<b>VHL</b>	very high level	AUS, HUN, LUX	0.605	0.605	3.000	2.300	2.666
<b>HL</b>	high level	UK, SVK, BEL	0.579	0.579	4.000	2.600	3.000
<b>ML</b>	medium level	LTV, SLO, GRE, FIN	0.447	0.434	2.833	1.333	2.166
		POL, CZH	0.421				
<b>LL</b>	low level	LIT, SPN, NTH	0.395	0.368	2.400	0.600	1.200
		PTG	0.368				
		DEN	0.342				
<b>VLL</b>	very low level	SWD	0.289	0.246	2.166	1.833	1.666
		BLG, ROM	0.237				
		GER, EST, ITL	0.211				
<b>IL</b>	insignificant level	FRA, CYP	0.184	0.123	0.800	0.500	0.250
		IRL	0.105				
		MLT	0.079				

#### 4.4 Hypothesis test results

According to the purpose of our study – to identify possible relationships between our empirical results and prior findings as regards the level of transparency ensured by European Union corporate governance codes, we examined possible correlations between disclosure groups that we have just created and codes’ issuers type and countries’ legal regimes, previously defined in literature.

For performing the empirical analysis, we calculated Pearson coefficient that is usually used for measuring the strength of linear dependence between two variables, giving a value between “1”, that describes the perfect direct relationship and “-1”, that reveals an indirect one, “0” value meaning that there is no linear correlation between variables.

The correlations between the dependent variables (Avg.D&T S\_Index) and both independent variables (LR and IT) are presented in table IV.

**TABLE IV – CORRELATIONS BETWEEN VARIABLES**

		Avg.D&T S_Index	LR <sub>1</sub>	LR <sub>2</sub>	IT
Avg.D&T S_Index	Pearson Correlation	1	.914*	.747	.923**
	Sig. (2-tailed)		.011	.088	.009
	N	6	6	6	6
*. Correlation is significant at the 0.05 level (2-tailed).					
**. Correlation is significant at the 0.01 level (2-tailed).					

Source: calculations made by authors using SPSS software

By analyzing the values of Pearson's coefficients, we reached to the conclusion that there is a positive relationship of high intensity (0.923) and a probability of significance of 99% (Sig. < 0,01) between the disclosure index of each group created and the average of scores assigned to these groups considering the four types of codes' issuer defined in prior literature. Consequently, our first hypotheses ( $H_1$ ) *will be accepted*, allowing us to assert that there is a relationship between disclosure groups created and the level of transparency ensured to corporate governance codes by considering their issuer's type defined in prior literature.

For testing our second hypotheses, we considered two classifications of countries legal regimes from prior related research. Accordingly, we identified a strong relationship (0.914) between the same disclosure groups' indices and the average values of scores assigned considering the first countries legal regimes defined in the year 1997, this being significant with the probability of just 95% (Sig. < 0,05). On the other hand, the importance given to disclosure and transparency by the newest countries' legal regimes from prior literature proved to be insignificant for establishing a relationship with the disclosure groups created, as the value of Pearson coefficient (0.747) and its level of significance (0.88) reveal.

From the above statistical analysis we can reach to the conclusion that the disclosure level of each group created is correlated just with the average scores calculated considering the legal regimes of countries defined by La Porta, et al. (1997). Consequently, our second hypotheses ( $H_2$ ) *will be just partially accepted*, allowing us to assert that there is a relationship between disclosure groups created and the level of transparency determined considering countries' legal regimes defined in prior literature.

## 5. CONCLUDING REMARKS AND IMPLICATIONS

The empirical analysis performed provides not only a comprehensive image of the importance given to disclosure and transparency by corporate governance codes from all European Union member states through the disclosure groups created, but also relevant comparisons with prior research findings focused on the same goal.

Thus, our paper concluded that the level of disclosure ensured by our groups of corporate governance codes is correlated with the types of issuer already defined in literature (Cicon et al, 2010). Accordingly, the highest level of disclosure is required by those codes settled in collaboration of several institutions, coming from various economic fields, while the lowest level comes from those issued by industry or trade associations that are more likely to defend their own interests through as little information disclosure as possible, rather than ensuring a transparent image.

As regards countries' legal regimes, we reached to contradictory results when considering both classifications from prior literature. Thus, our results are in accordance just with those of La Porta, et al. (1997), the highest level of disclosure being ensured by codes issued under Common Law regime. This conclusion, highlights that Anglo-Saxon model of corporate governance proved to be over the others in this particular approach concerning transparency and disclosure requirements, too, as many researchers have already concluded in general. Our findings also reveal that there are other codes, from French and German civil regimes or even from the Former socialist one, that gave at least as much or even higher importance to disclosure issues.



In conclusion, our empirical study provides relevant results, comparable and consistent with prior literature findings, through a different methodology, leading to disclosure groups of corporate governance codes, which all are adding value to our research.

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## ECONOMIC VALUE ADDED IN INDIAN CROSS BORDER MERGERS

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### ABSTRACT

*There has been a tremendous increase in the number of foreign acquisitions by companies located in India. There are many articles, using event study analysis, that have produced conflicting results on shareholder wealth of the acquiring firm in a cross border merger/acquisition. This study takes a different approach. It looks at the Economic Value Added, Earnings per Share and Return on Capital Employed of acquiring Indian firms. We find evidence of a decrease in Economic Value Added, Return on Capital Employed and Earnings per Share in the years following the cross border merger/acquisition.*

**Keywords:** Cross Border Mergers, Shareholder Wealth, Economic Value Added

### 1. INTRODUCTION

A cross border merger is the merger of two companies that have head offices as well as primary operations in two different countries. These cross border mergers are different as they are governed by a set of laws that must be in conformation with the laws of both countries. In India, increased competition from multinational firms has been a challenge for local firms. One of the ways that Indian companies have confronted this challenge is by expanding into new foreign markets so as to achieve economies of scale. However, foreign expansion requires infrastructure, knowledge and local skills that cannot be acquired easily in a short period of time. The preferred route to going 'global' has been to merge with or acquire an established foreign firm. However there are some hurdles to cross border mergers. There are the legal and accounting issues, there are technological differences, human resource and cultural issues and problems in integration of operations after the merger. This paper looks at the success of cross border mergers in terms of Economic Value Added. Are cross border mergers by Indian firms successful in adding economic value to the firm?

### 2. LITERATURE REVIEW

The literature on shareholder wealth in the case of cross border mergers is very limited and provides for mixed and sometimes, conflicting results. For European firms Corhay and Rad (2000) found positive gains for bidder firms in cross border acquisitions, while for Canadian firms Tebourbi (2005) found that the returns are significantly higher than for domestic bidders. Fatemi and Furtado (1988) supported by Danboldt (1995) and found that the degree of market integration in imperfect markets could be a reason for value enhancement in cross border acquisitions. Markides and Ittner (1994) hypothesized that for international risk diversification to occur capital markets had to be less than perfectly integrated. Therefore, the specific gains were to accrue in a cross border acquisition largely depended on the degree to which capital markets were integrated. Doukas (1995) found small positive abnormal returns to acquirers for US firms, but not for a mixed sample that included non US firms. Eckbo and Thorburn (2000) detect positive abnormal returns for domestic Canadian bidders, but no abnormal returns for US-based acquirers. Brealey et al. (1998) study a world-wide sample of 74 cross-border mergers from 1987 to 1992 found negligible abnormal returns for acquirers. Phani, Bharati, Bohra and Sah (2012), in a study of 10 Indian firms used Data Envelopment Analysis to find that cross border mergers did not improve firm efficiency and were value destructive in some cases.

This study uses an approach that is independent of market valuation. It focuses on Economic Value Added (EVA) along with Earnings per Share (EPS) and Return on Capital Employed (ROCE) for Indian cross border bidders prior to and after the acquisition. This approach has an advantage over stock market returns because it eliminates the noise and volatility inherent in market valuations and provides for more valid and reliable results.

### 3. METHODOLOGY AND RESULTS

“Economic Value Added is a measure of economic profit. It is calculated as the difference between the Net Operating Profit After Tax and the opportunity cost of invested Capital. This opportunity cost is determined by the weighted average cost of Debt and Equity Capital ("WACC") and the amount of Capital employed. ....What separates EVA<sup>®</sup> from other performance metrics such as EPS, EBITDA, and ROIC is that it measures all of the costs of running a business-operating and financing. This makes EVA<sup>®</sup> the soundest performance metric, and the one most closely aligned with the creation of shareholder value. In fact, EVA<sup>®</sup> and Net Present Value arithmetically tie, so companies can be assured that increasing EVA<sup>®</sup> is always a good thing for its investors - certainly not the case with EPS (see Enron) or Free Cash Flow. Many even argue that EVA<sup>®</sup> is a better decision tool than NPV because it captures the period-by-period value creation or destruction of a given firm or investment, and makes it easy to audit performance against management projections”. (Stern Stewart & Co. holders of EVA copyright).

A sample of 20 cross border mergers was obtained from newspaper reports for the 2003 to 2008 period. Data on these were obtained from yahoofinance.com and from moneycontrol.com. From this sample two companies that had inter-lapping mergers were dropped, as was one firm that had corrupted data. The balance sheet and income statements were obtained for these companies for the year of the cross border merger, the event date and the two years following the merger. EPS and ROCE were calculated for the year of the event and the two years following the event.

EPS = Profit after Taxes/Number of shares issued

ROCE = (Earnings before Interest and Taxes) / (Total Assets – Current Liabilities)

EVA was calculated by subtracting the amount of capital times the cost of capital from NOPAT. The cost of capital was calculated for each firm using the weighted average of the individual costs. Adjustments were made in the balance sheet and income statement to calculate NOPAT.

EVA = NOPAT – (Cost of Capital x Amount of Capital)

Table 1 gives the list of Indian firms and the acquired firm. Table 2 shows the variation in EPS for each firm in the two years following the event. Table 3 gives the Return on Capital Employed and Table 4 the EVA for each of the firms in the year of and the two years following the acquisition. From Table 2 we find that only two firms, Tata Steel and Tata Power Company had positive growth in EPS in the event year and the two years following. Eight firms had negative growth in each of the two years and two firms had negative EPS growth for each of the three years. The average growth in EPS was -6.7% and -10.2% for the two years following the event. From Table 3, Return on Capital Employed we find that no firm had positive growth in ROCE for each of the two years following the event year while seven firms had negative growth for both the post event years. The average ROCE for the two years following the event was -6.5% and 7.4% respectively. Table 4 displays the EVA for each of the 17 firms in our sample. We find that not even one firm had a positive growth in EVA for the two years following the event, while 8 firms had negative growth in EVA for each of the two years. The average percentage change in EVA was

a staggering -159.7% for the year following the event and -9.50% for the year after. There is evidence of value destruction in cross border mergers for the acquiring firm. These statistics on EVA confirm the results found in Phani et.al (2012) pointing towards a destruction of wealth for stockholders of the bidding Indian firms in cross border acquisitions. Indian companies seem to be overpaying for foreign acquisitions in their bid to expand overseas.

**TABLE 1: LIST OF CROSS BORDER ACQUISITIONS**

<b>EVENT YEAR</b>	<b>BIDDING FIRM</b>	<b>ACQUIRED FIRM</b>
2007	HINDALCO	NOVELIS
2006	DR. REDDY'S LAB	BETAPHARM
2006	SUZLON	HANSEN TRANSMISSIONS
2005	HINDUSTAN PETROLEUM	B P AFRICA
2006	RANBAXY LABS	TERAPIA
2005	TATA STEEL	NATSTEEL
2006	VIDESH SANCHAR	TELEGLOBE
2009	STERLITE	ASARCO
2008	TATA MOTORS	JAGUAR LAND ROVER
2007	ESSAR STEEL	ALGOMA STEEL
2007	UNITED SPIRITS	WHYTE AND MACKAY
2007	TATA POWER	KALTIM PRIMA COAL
2008	TATA CHEMICALS	GENERAL CHEMICALS
2006	TATA TEA	GLACEAU
2007	WIPRO	INFOCROSSING
2008	JUBILANT ORGANOSYS	DRAXIS HEALTH
2006	TATA COFFEE	EIGHT O'CLOCK COFFEE

**TABLE 2: EPS ONE YEAR BEFORE AND TWO YEAR AFTER EVENT DATE**

<b>COMPANY</b>	<b>-1</b>	<b>0</b>	<b>1</b>	<b>2</b>
HINDALCO	14.28	22.21	23.31	13.20
DR. REDDY'S LAB	8.55	27.53	70.09	28.26
SUZLON ENERGY	41.41	42.21	36.82	9.47
HINDUSTAN PETROLEUM	56.11	37.64	11.95	46.30
RANBAXY LABS	5.69	10.21	16.56	-24.85
TATA STEEL	47.48	62.77	63.35	72.74
VSNL	26.54	16.83	16.44	10.68
STERLITE INDUSTRIES	13.43	17.45	9.89	4.22
TATA MOTORS	49.65	52.63	19.48	39.26
ESSAR STEEL	3.83	3.66	1.62	0.06
UNITED SPIRITS	6.83	52.21	31.06	29.62
TATA POWER COMPANY	30.85	35.21	39.42	41.65
TATA CHEMICALS	20.65	40.56	19.22	17.87
TATA TEA	22.93	33.25	51.93	50.59
WIPRO	14.17	19.48	20.96	20.30
JUBILANT ORGANOSYS	16.14	26.83	17.67	22.87
TATA COFFEE	23.02	17.90	10.83	13.21

**TABLE 3: ROCE ONE YEAR BEFORE AND TWO YEARS AFTER THE ACQUISITION**

COMPANY	-1	0	1	2
HINDALCO	15.37	19.07	12.44	9.00
DR. REDDY'S LAB	5.34	8.90	30.79	10.55
SUZLON ENERGY	35.78	30.44	25.94	16.21
HINDUSTAN PETROLEUM	30.41	15.89	2.75	11.41
RANBAXY LABS	3.07	10.05	4.93	2.52
TATA STEEL	38.77	56.06	43.72	27.71
VSNL	11.41	11.52	10.28	6.53
STERLITE INDUSTRIES	7.86	8.31	5.03	5.85
TATA MOTORS	25.82	18.96	6.41	10.37
ESSAR STEEL	8.73	12.54	15.21	15.01
UNITED SPIRITS	4.69	15.37	18.90	12.56
TATA POWER COMPANY	8.69	11.63	10.88	10.66
TATA CHEMICALS	18.98	11.30	13.36	11.38
TATA TEA	14.59	15.93	10.87	11.23
WIPRO	35.58	33.30	23.23	26.77
JUBILANT ORGANOSYS	10.24	12.91	12.70	11.44
TATA COFFEE	12.58	9.81	7.07	9.08

**TABLE 3: EVA ONE YEAR BEFORE AND TWO YEAR AFTER THE ACQUISITION**

COMPANY	-1	0	1	2
HINDALCO	11404.67	6992.709	-6160.87	-8904.66
DR. REDDY'S LAB	-43.8379	-34.4009	743.7966	-80.03
SUZLON ENERGY	272.4663	408.0175	605.3263	247.14
HINDUSTAN PETROLEUM	1.318	-476.98	-3610.24	651.722
RANBAXY LABS	-171.551	-24.5671	-353.896	42.0278
TATA STEEL	1545.132	973.9072	402.6828	-168.542
VSNL	13383.33	9555.19	-2952.61	-5477.87
STERLITE INDUSTRIES	1334	1652	866	522
TATA MOTORS	762.7432	1300.608	-413.62	311.4272
ESSAR STEEL	355.2757	398.1491	1854.19	1778.048
UNITED SPIRITS	100.5768	134.0008	186.4444	-40.8508
TATA POWER COMPANY	-143.647	-332.836	-366.444	-422.937
TATA CHEMICALS	633.7541	657.8676	550.1781	479.6298
TATA TEA	-52.2174	-2.5071	-86.3205	-112.572
WIPRO	1334.457	1598.768	1232.697	2106.443
JUBILANT ORGANOSYS	-125.411	44.0713	146.1267	68.6368
TATA COFFEE	0.68625	-28.1868	52.0475	48.288

## 5. CONCLUSION

We find that cross border acquisitions by Indian firms are value destructive. These are in line with the results of Chakrabarti (2007) for long run cross border acquisitions and Phani et. al. (2012) who find that cross border mergers do not add value to acquiring Indian firms in a cross border deal. However, as Geyser and Liebenberg (2003) note, "EVA, on its own, is inadequate for assessing a company's progress in achieving its strategic goals and in measuring divisional performance. Other more forward-looking measures, often non-financial in nature, should be included in regular performance reports to provide early warning signs of problem areas".

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# DESTINATION IMAGE OF THAILAND SOUTHERN TOURISM AREA 1

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## ABSTRACT

*The main purpose of this study is to investigate the dimensionality of destination image of Thailand southern tourism area 1 (Songkhla and Satun province). The data were collected from 550 Thai tourists (275 each province). The research instrument was 5-point Likert scale questionnaires. The preliminary scale consisted of 31 items ( $\alpha = .797$ ). Data was analyzed via exploratory factor analysis, using SPSS. The results indicate that destination image had five dimensions including (1) Hospitality, (2) Nature (3) Brand, (4) Transportation and (5) Entertainment with 23 indicators. There is no significant difference between tourists visiting Songkhla and those visiting Satun with regard to their perceived overall image. Management and tourism marketing practitioners can use the research results to promote tourism and create tourism products that are in line with the perceived destination image.*

**Keywords:** Destination image, Songkhla, Satun, Thailand

## 1. INTRODUCTION

Thailand has achieved the most impressive development in the tourism industry since the past two decades. Although Thailand is a small country, it is one of the world's leading tourist destinations. (Tourism Authority of Thailand, 2007). Thailand is situated in the heart of Southeast Asia. Tourism is Thailand fastest growing industry and commerce. It contributes to the gross domestic product (GDP), impacts positively on employment, investment, foreign exchange, and job creation. It is a way to earn foreign currency, increase international reserves, assist in increased production, and maximize the usage of resources from other sectors (Thailand Board of Investment, 2001).

However, there are the negative situational factors for the tourism industry in southern part of Thailand, including the tsunami and unrest in three southern border provinces, including Yara, Pattanee and Narathiwat provinces. In addition, the fierce competition from the emerging cities such as Vietnam, China and India and the cities with the best new product such as Japan, Hong Kong and Korea affects tourism in southern Thailand (Tourism Authority of Thailand, 2006). The number of both Thai and international tourists decreased. Therefore, it is essential that governments and the private sectors need to increase marketing efforts to stimulate tourists' demand for travelling to the destination by creating positive images through promotional strategies, including advertising, setting special events, and hosting international exhibitions and conventions.

The purpose of this study was to:

- (1) Find out whether there is a statistically significant difference between Thai tourists visiting Songkhla province and those visiting Satun province in terms of demographic characteristics (gender, age, education, income and occupation)
- (2) Examine the travel behavior of Thai tourists visiting Songkhla province and those visiting Satun province
- (3) Identify the underlying dimensions of the current image of Thailand southern tourism area 1 (Songkhla and Satun province)
- (4) Investigate whether there is a statistically significant difference in perceived destination image of Thailand southern tourism area 1 (Songkhla and Satun province) between Thai tourists visiting Songkhla province and those visiting Satun province.

## 2. LITERATURE REVIEW

### 2.1 Destination Site and Secondary Data: Thailand Southern Tourism Area 1

The Tourism Authority of Thailand (TAT) was established in 1960 and become an official organization to promote the country's tourism. TAT Southern Area 1 office has the areas of responsibility, including Songkhla and Satun province (The Tourism Authority of Thailand, 2010).



Songkhla, one of Thailand's important ports and coastal provinces, is located 950 kilometers from Bangkok. The province is bordered by the States of Kedah (Sai Buri) and Perlis of Malaysia to the south and the Gulf of Thailand to the east. In addition, Songkhla borders on Nakhon Si Thammarat and Phatthalung provinces to the north, Yala and Pattani provinces to the south, and Satun and Phatthalung provinces to the west. A historic town endowed with ancient arts and places of cultural importance, Songkhla, a melting pot of Thais, Chinese and Malays, charms visitors with its unique traditions, dialect, and folk entertainment. Hat Yai, a district of Songkhla, is perhaps better known than the provincial capital itself. Hat Yai serves as a southern hub of education, communication, shopping, trading and transportation as well as a gateway to Malaysia and Singapore (The Tourism Authority of Thailand, 2010).

Satun is a small province in the south of Thailand that borders Malaysia, facing the Andaman Sea. The province possesses renowned picturesque islands with great variety of fauna and flora. The majority of the locals are Muslim. It is located 973 kilometres from Bangkok and occupies an area of 2,478 square kilometres with 80 kilometres of coastline. Most tourists travel to the pristine islands of Tarutao National Park. Snorkelling can be found at Lipe island, while neighbour Adnag island is stunning with forest, hills and waterfalls. Thale Ban National Park is famous for its abundant wildlife, with many waterfalls and caves worth visiting (The Tourism Authority of Thailand, 2010).

## **2.2 Perceived Destination Image**

Image is a set of beliefs, ideas and impressions that a tourist has about the destination (Fakeye and Crompton, 1991). Therefore, Image is characterized by a high level of subjectivity, including both cognitive aspects (beliefs) and affective aspects (feeling) (Balagu and Brinberg, 1997; Bigné, Sánchez and Sánchez, 2001). The combination of these cognitive and affective aspects provides a "Global image" of the provider which is a positive or negative assessment of the tourists (Balagu and McCleary, 1999).

Hunt (1975) suggested that image was a critical factor in a destination's tourism success. Moreover, the attraction elements such as scenery, facilities, activities, and cultures of a destination provide the motivations necessary to induce an individual to visit a determined place. Destination image is measurable and needs to be assessed. Destination image is multidimensional and comprises both symbolic and tangible features (Echtner and Ritchie 1993). Dimensions, factors, or attributes of destination image have been studied widely by various researchers, for example, Chen and Tsai's (2007) study, destination image consists of destination brand, entertainment, nature and culture, and sun and sand. Beerli and Martin (2004) study, destination image consists of natural and cultural resources, general, tourist and leisure infrastructures, atmosphere, social setting and environment, sun and sand, knowledge, relaxation, entertainment, and prestige. Baloglu and McCleary (1999) study, destination image consists of quality of experience, attractions, value/environment, relaxation/escape, excitement/adventure, knowledge, social and prestige.

This study defines destination image as "the visitor's subjective perception of the destination reality", following Chen and Tsai (2007) and adapts the image attributes of Chen and Tsai's (2007) Beerli and Martin (2004) and Baloglu and McCleary (1999) for the study.

## **3. METHODOLOGY**

### **3.1 Scope of the Study**

Convenient sampling method was employed to collect tourist survey data in Thailand southern tourism area 1 (Songkhla and Satun province). Adult tourists over the age of 18 years were approached by trained student survey administrators. Data were collected from these tourists in a major tourism destination in Songkhla and Satun province on April 2011 which is considered the "peak" season for Thailand southern tourism area 1.

### **3.2 Instrument**

The questionnaire was developed based on prior studies. The survey questionnaire consisted of the following sections: demographic data of the respondents and destination image. In the demographic characteristics and travel behavior section, gender, age, education, income, occupation, with whom you traveling, purpose of visiting and duration of visiting were asked. All 31 attributes for destination image were used to document the travelers' perception of destination image. These 31 items that measured image were adapted from the works of Baloglu and McCleary (1999), Beerli (2002) and Chen and Tsai's (2007). The attributes for destination image were rated on a five-point Likert scale,

where “1” equaled strongly disagree and “5” equaled strongly agree. Prior to being administered, the questionnaire was pilot tested using 30 tourists to help refine its validity and content. A reliability of the entire destination image scale was Cronbach’s alpha of .797, which is considered satisfactory for exploratory studies (Hair, Black, Babin and Anderson, 2010).

### 3.3 Data analysis

Data were analyzed using SPSS. Descriptive statistics were used for analyze the demographic data of the respondents. Then, an exploratory factor analysis was undertaken to determine the underlying dimensionality of destination image. Specifically, using the Principal Component Analysis with the Varimax rotation procedure, items with factor loadings lower than .4 or with serious cross-loadings on more than one factor were removed.

**TABLE 1: DEMOGRAPHIC PROFILE OF THE RESPONDENTS**

	<b>Songkhla (n = 275)</b>	<b>Satun (n = 275)</b>	<b>Chi- square test</b>	<b>Significance</b>
<b>Gender</b>			<b>1.244</b>	<b>.265</b>
Male	116 (42.18%)	129 (46.91%)		
Female	159 (57.82%)	146 (53.09%)		
<b>Age</b>			<b>82.765</b>	<b>.000***</b>
18 - 24 years old	127 (46.18%)	33 (12.00%)		
25 – 34 years old	61 (22.18%)	114 (41.45%)		
35 – 44 years old	46 (16.73%)	60 (21.82%)		
45 – 54 years old	24 (8.73%)	34 (12.36%)		
55 – 64 years old	15 (5.45%)	23 (8.36%)		
65 years old or older	2 (0.73%)	11 (4.00%)		
<b>Education level</b>			<b>9.626</b>	<b>.022*</b>
High school or less	53 (19.27%)	33 (12.00%)		
Diploma	55 (20.00%)	50 (18.18%)		
College-level graduation	149 (54.18%)	159 (57.82%)		
Graduate or higher	18 (6.55%)	33 (12.00%)		
<b>Income</b>			<b>18.372</b>	<b>.003**</b>
10,000 Baht or less	127 (46.18%)	89 (32.36%)		
10,001 – 20,000 Baht	88 (32.00%)	91 (33.09%)		
20,001 – 30,000 Baht	36(13.09%)	43 (15.64%)		
30,001 – 40,000 Baht	10 (3.64%)	19 (6.91%)		
40,001 – 50,000 Baht	5 (1.82%)	16 (5.82%)		
50,000 Baht or higher	9 (3.27%)	17 (6.18%)		
<b>Occupation</b>			<b>64.892</b>	<b>.000***</b>
Students	95(34.55%)	24(8.73%)		
Government officers	47(17.08%)	72(26.17%)		
Office workers	40(14.55%)	68(24.73%)		
Entrepreneurs	62(22.55%)	70(25.45%)		
Labor	9(3.27%)	21(7.64%)		
Housewife	11(4.00%)	7(2.55%)		
Other	11(4.00%)	13(4.73%)		

\*significance at .05, \*\* significance at .01, \*\*\* significance at .001

## 4. RESULTS

### 4.1 Demographic Profile of Respondents

Table 1 shows demographic profiles of Thai tourists visiting Thailand southern tourism area 1 (Songkhla and Satun province). The results revealed that Thai tourists visiting in both provinces are similar in gender. The majority of them are female. However, there is a significant difference in ages. The majority of Thai tourists visiting Songkhla (46.18%) were between 18-24 years old, while 12% of those visiting Satun were in that age group. The majority of tourists visiting Satun are older than those

visiting Songkhla. Differences between respondents from two provinces also can be found in their education, income and occupation. The majority of Thai tourists visiting Songkhla (49.27%) have an associate's degree or less, whereas the majority of those visiting Satun have good educations, with 68.82% holding a bachelor's degree or higher. The majority of Thai tourists visiting Songkhla (57.1%) were students and entrepreneur with 46.18% having income of 10,000 Baht or less, whereas the majority of those visiting Satun (51.62%) were government officers and entrepreneur with 67.64% having income higher than 10,000 Baht. It implied that the majority of Thai tourists visiting Satun have better education, better occupation and higher income than those visiting Songkhla

#### 4.2 Travel Behavior

Table 2 shows that Thai tourists mostly travelled to Thailand southern tourism area 1 (Songkhla and Satun province) with their family. Both groups travelled with similar group of people, but the ranking was different. Thai tourists travelling to Satun mostly brought the package tour to explore the destination, whereas Songkhla tourists mostly not. The main purpose of their trip is mostly for holiday. The majority of Thai tourists travelling to Songkhla (42.2%) had one day trip, whereas those visiting Satun (81.82%) stay longer.

**TABLE 2: TRAVEL BEHAVIOR**

	<b>Songkhla</b>	<b>Rank</b>	<b>Satun</b>	<b>Rank</b>
<b>Travel with whom</b>				
Alone	24(8.7%)	4	9(3.3%)	5
Travel with family	125(45.5%)	1	101(36.7%)	1
Travel with friends	100(36.4%)	2	65(23.6%)	3
with colleague	19(6.9%)	3	27(9.8%)	4
Package tour	7(2.5%)	5	73(26.5%)	2
<b>Purpose of trip</b>				
Family visit	15(5.5%)	4	29(10.5%)	2
Holiday	202(73.5%)	1	216(78.5%)	1
Business	8(2.9%)	5	10(3.6%)	4
Holiday and business	26(9.5%)	2	16(5.8%)	3
Others	24(8.7%)	3	4(1.5%)	5
<b>Day(s) of visit</b>				
1 day	116(42.2%)	1	50(18.2%)	3
2 days 1 night	50(18.2%)	3	113(41.1%)	1
3 days 2 nights	26(9.5%)	4	93(33.8%)	2
4 days 3 nights or more	83(30.2%)	2	19(6.9%)	4

#### 4.3 Destination Image Dimensions

The Principal Component Analysis (PCA) with Varimax rotation was conducted to explore the underlying dimensions of Thai tourists' perceived destination image of Thailand southern tourism area 1 (Table 3). The Kaiser-Mayer-Olkin (KMO = .936) and Bartlett's test of Sphericity ( $p < 0.00$ ) both indicating that factor analysis was appropriate for this study. Five factors were extracted, explaining 67.29% of the total variance, demonstrating a reasonably high correlation between the factor groups and their individual items. A Cronbach's alpha statistic for the entire scale was .90, demonstrating good scale reliability. The five factors were labeled as follows: "Hospitality" (5 items with Cronbach's alpha = .90), "Nature" (5 items with Cronbach's alpha = .84), "Brand" (5 items with Cronbach's alpha = .84), "Transportation" (4 items with Cronbach's alpha = .87), and "Entertainment" (4 items with Cronbach's alpha = .77) with total of 23 items. These five factors have eigenvalues greater than 1.0 which satisfy the requirement of the choosing factor model (Hair et al, 2010). The means and standard deviations of the five factors (Hospitality, Nature, Transportation, Brand and Entertainment)

for Thai tourists are provided in Table 3. The respondents considered “Nature” and “Brand” factors as top image for Thailand southern tourism area 1, followed by “Transportation” “Hospitality” and “Entertainment” factors consecutively.

**TABLE 3: PRINCIPAL COMPONENT ANALYSIS OF DESTINATION IMAGE**

Items		Factor loadings				
		1	2	3	4	5
Q17	Food & beverage of	.824				
Q15	Price of accommodation	.786				
Q18	Services of accommodation	.775				
Q16	Safety of activities	.763				
Q19	Food & beverage provision	.744				
Q11	Uniqueness of landscape		.763			
Q10	Great variety of fauna and flora		.761			
Q13	Good weather		.708			
Q14	Beautiful beaches		.650			
Q12	Unusual ways of life and		.633			
Q3	Clean			.760		
Q2	Good quality of life			.735		
Q1	Offers personal safety			.723		
Q4	Good name and reputation			.621		
Q5	Hospitable and friendly people			.577		
Q26	Internal transportation				.824	
Q25	Accessibility				.793	
Q27	Parking facilities				.754	
Q28	General infrastructure				.720	
Q7	Good shopping place					.853
Q6	Good night life					.786
Q9	Exotic					.504
Q8	Varied gastronomy					.482
Mean		3.651	3.953	3.885	3.790	3.534
SD		.628	.697	.628	.7242	.7600
Eigen value		9.198	1.994	1.624	1.489	1.170
Cumulatively explained valiance (%)		16.163	30.426	43.955	57.452	67.289
Cronbach's $\alpha$		.900	.840	.836	.871	.767

**TABLE 4: INDEPENDENT T-TEST RESULTS BETWEEN SONGKHLA AND SATUN TOURISTS**

		Songkhla			Satun			Mean Difference	t-test	p value
		$\bar{x}$	SD	Rank	$\bar{x}$	SD	Rank			
	<b>HOSPITALITY</b>	<b>3.530</b>	<b>0.680</b>	<b>5</b>	<b>3.767</b>	<b>0.656</b>	<b>3</b>	<b>-0.237</b>	<b>-4.165</b>	<b>0.000***</b>
Q17	Food & beverage of accommodation	3.502	0.780	19	3.727	0.751	18	-0.225	-3.453	0.001***
Q15	Price of accommodation	3.487	0.799	21	3.847	0.698	8	-0.360	-5.628	0.000***
Q18	Services of accommodation worker	3.633	0.801	16	3.749	0.749	14	-0.116	-1.759	0.079
Q16	Safety of activities	3.531	0.793	18	3.793	0.743	10	-0.262	-3.995	0.000***
Q19	Food & beverage provision	3.498	0.906	20	3.745	0.755	15	-0.247	-3.478	0.001***
	<b>NATURE</b>	<b>3.897</b>	<b>0.735</b>	<b>1</b>	<b>4.065</b>	<b>0.747</b>	<b>2</b>	<b>-0.168</b>	<b>-2.666</b>	<b>0.008**</b>
Q11	Uniqueness of landscape	4.062	0.850	3	3.920	0.925	7	0.142	1.873	0.062
Q10	Great variety of fauna and flora	3.625	0.901	17	3.775	0.955	11	-0.149	-1.883	0.060
Q13	Good weather	4.160	0.839	1	4.265	0.823	1	-0.105	-1.488	0.137
Q14	Beautiful beaches	3.905	1.014	7	4.156	0.880	2	-0.251	-3.099	0.002**
Q12	Unusual ways of life and customs	3.927	0.812	6	3.738	0.861	16	0.189	2.650	0.008**
	<b>BRAND</b>	<b>3.867</b>	<b>0.605</b>	<b>2</b>	<b>4.080</b>	<b>0.643</b>	<b>1</b>	<b>-0.213</b>	<b>-4.007</b>	<b>0.000***</b>
Q3	Clean	3.447	0.884	23	3.847	0.887	9	-0.400	-5.298	0.000***
Q2	Good quality of life	3.738	0.757	12	3.978	0.709	6	-0.240	-3.836	0.000***
Q1	Offers personal safety	3.665	0.874	14	4.098	0.711	3	-0.433	-6.371	0.000***
Q4	Good name and reputation	4.116	0.721	2	4.044	0.805	5	0.073	1.116	0.265
Q5	Hospitable and friendly people	3.818	0.817	11	4.098	0.741	4	-0.280	-4.210	0.000***
	<b>TRANSPORTATION</b>	<b>3.847</b>	<b>0.722</b>	<b>3</b>	<b>3.758</b>	<b>0.765</b>	<b>4</b>	<b>0.090</b>	<b>1.415</b>	<b>0.158</b>
Q26	Internal transportation	3.858	0.814	9	3.738	0.890	17	0.120	1.650	0.100
Q25	Accessibility	3.989	0.817	5	3.775	0.783	12	0.215	3.144	0.002**
Q27	Parking facilities	3.695	0.864	13	3.760	0.880	13	-0.065	-0.880	0.379
Q28	General infrastructure	3.833	0.855	10	3.673	0.872	19	0.160	2.172	0.030*
	<b>ENTERTAINMENT</b>	<b>3.751</b>	<b>0.775</b>	<b>4</b>	<b>3.558</b>	<b>0.817</b>	<b>5</b>	<b>0.193</b>	<b>2.837</b>	<b>0.005**</b>
Q7	Good shopping place	3.869	0.903	8	3.029	0.977	23	0.840	10.469	0.000***
Q6	Good night life	3.662	0.923	15	3.095	1.110	22	0.567	6.516	0.000***
Q9	Exotic	3.451	0.974	22	3.455	0.959	21	-0.004	-0.044	0.965
Q8	Varied gastronomy	4.051	0.813	4	3.662	0.939	20	0.389	5.194	0.000***
	<b>DESTINATION IMAGE</b>	<b>3.778</b>	<b>0.556</b>	<b>-</b>	<b>3.846</b>	<b>0.561</b>	<b>-</b>	<b>-0.067</b>	<b>-1.414</b>	<b>0.158</b>

\*significance at .05, \*\* significance at .01, \*\*\* significance at .001

#### 4.4 Ranking of Tourist Perceived Destination Image

Table 4 shows the ranking of tourists' perceived destination image of Songkhla and Satun province and the comparison of whether there is a statistically significant difference of perceived destination image between Thai tourists visiting Songkhla and those visiting Satun. The results revealed that the tourists visiting Songkhla and Satun share similarity of ranking "Good weather" as the top image attribute.

The top five ranks of Songkhla image attributes were "Good weather", "Good name and reputation", "Uniqueness of landscape", "Varied gastronomy" and "Accessibility" consecutively. These are strengths of Songkhla that need to be used to market the province. The attributes that contributed the least to the tourists' perceived image of Songkhla, namely "Clean", "Exotic", "Price of

accommodation", "Food and beverage provision" and "Food and beverage of the accommodation". They are the areas that need improvement.

The top five ranks of Satun image attributes were "Good weather", "Beautiful beaches", "Offer personal safety", "Hospitable and friendly people" and "Good name and reputation" consecutively. These are strengths of Satun that need to be used to market the province. The attributes that contributed the least to the tourists' perceived image of Satun, namely "Good shopping place", "Good night life", "Exotic", "varied gastronomy" and "General infrastructure". They are the areas that need improvement.

The independent t-test was used to compare whether differences exist between the tourists visiting Songkhla and those visiting Satun in regard to destination image. It found that there is no significant difference between the tourists visiting Songkhla and those visiting Satun with regard to their perceived overall image. However, differences were found between tourists visiting both provinces in four out of five factors, including "Hospitality", "Brand", "Nature", and "Entertainment", except "Transportation" factor, as shown in Table 4. The tourists visiting Satun felt that the "Hospitality", "Nature", "Brand" dimensions were significantly more satisfied than did those visiting Songkhla. On the other hand, Songkhla tourists felt that "Entertainment" dimension was significantly more satisfied when thinking of Thailand southern tourism area 1 as a tourist destination than did those visiting Satun.

## **5. CONCLUSIONS AND IMPLIMENTATIONS**

This study investigated the image of Thailand southern tourism area 1 (Songkhla and Satun province) as a tourist destination through the eyes of Thai tourists and examined the differences in the demographic characteristics and travel behavior between the tourists visiting Songkhla and those visiting Satun. The results revealed that the tourists visiting Songkhla differed from those visiting Satun in terms of age, Education and occupation. For both groups mostly travelled with family. Purpose of trip was for holiday. However, Satun tourists stayed longer than Songkhla tourists.

Destination image of Thailand southern tourism area 1 (Songkhla and Satun province) consists of five factors, including "Nature" and "Brand" factors as top destination image, followed by "Transportation", "Hospitality" and "Entertainment" factors. Songkhla tourists shared the most similar strength image attribute "Good weather" of Thailand southern tourism area 1 with those of international tourists from previous research (Rittichainuwat, 2006). There is no statistically significant difference between the tourists visiting Songkhla and those visiting Satun with regard to their perceived overall image. But the differences found in four out of five factors, including Hospitality, Nature, Brand and Entertainment, except Transportation factor. As considering the destination image attributes, 15 out of 23 attributes were significantly differences between Songkhla and Satun province. Based on the results of the study, the following suggestions are made:

First, the results show that visitors of Songkhla and Satun province have differences in terms of demographic characteristics, including age, education, income and occupation. Hence, destination marketers should customize their products, services and promotional campaign when targeting different demographic segments.

Second, it found that Thai tourists visiting both Songkhla and Satun province mostly travel with their family. The majority of Thai tourists buy the package tour to visit Satun, while not many Thai tourists visiting Songkhla buy the package tour. The results also reported that Thai tourists visiting Satun province stay at the destination longer than those visiting Songkhla. The destination marketers should create the activities, facilities, entertainment, services and package tour that suitable and enjoyable for all members in the family in both Songkhla and Satun province. Songkhla province should promote longer stay tourism campaign which aims the tourists not just travelling for sightseeing but for staying and experiencing life in a particular destination. The Tourism Authority of Thailand (TAT) should emphasize Songkhla for international and domestic long-stay tourists, for example promote education tourism or health and medical tourism.

Third, maintain and preserve the strength images of Thailand southern tourism area 1 identified in this study. Thai tourists ranked "Good weather" as the most perceived image attribute of this destination. Southern part of Thailand has been endowed with beautiful beaches which have given this tourism area a competitive advantage. Therefore, Thai government should implement methods to help preserve the beauty and quality of these natural resources in order to maintain the sustainability of



southern Thai tourism. This evidence is supported by the study of Henkel, Henkel, Agrusa, Agrusa, and Tanner (2006), which revealed that culture and beaches were the top two images that both international tourists and Thai residents had in mind when thinking of Thailand as a tourist destination.

Fourth, improve the attributes that contributed the least to the tourists' perceived image. For Songkhla province, as a tourist destination, it should improve the hospitality services and the cleanliness of the beaches and other public facilities. It is essential to educate and train local people to be good host. The friendliness of Thai residents was another factor that international tourists perceived to be important in choosing Thailand as a travel destination (Henkel et al, 2006). The government should enforce rules and regulations of public areas. For Satun province, as a tourist destination, it should provide more entertainment such as shopping place, nightlife, good food and some new attractions.

Fifth, in corporate differences in the perceived image of Thailand southern tourism area 1 between the tourists visiting Songkhla and those visiting Satun province, it is suggested that destination marketing and plans for Songkhla and Satun should formulate, implement and control separately and independently under the participation of all sectors, including central government, local government, private sector and all the residents in the particular destination.

## 6. LIMITATION AND FUTURE RESEARCH

The results of the study regarding destination image of Thailand southern tourism area 1 (Songkhla and Satun province) are limited to the Thai tourists and cannot be generalized to the whole tourists population. The data were collected only from Thai tourists in two provinces (Songkhla and Satun) during 1 month period in the peak season on April, 2011. The findings of this study were also based on the responses of those who were in the area during that period. However, the results have provided meaningful information to those who are responsible for promoting Thai tourism, especially for Thailand southern tourism area 1.

For future research, it is suggested a survey should be conducted with a larger sample size, with different market segments, such as foreign tourists, business owners, people who work in the tourism and hospitality field, and/or government officers to find out image of Thailand southern tourism area 1 as a tourist destination from their perspectives. Future studies would achieve more specific and exact results, and determine practical marketing strategies by examining and analyzing tourists in terms of segment as well as considering special promotions for different segments depending on season. Finally, the area of research permits the results to be generalized for the sample population and the destination of Thailand southern tourism area 1 (Songkhla and Satun province), making it advisable to replicate this research in other tourism destination in Thailand.

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# THAILAND AS LOCATION FOR INTERNATIONAL JOINT VENTURES: EXPLORING THE HOST COUNTRY LOCATION FACTORS

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## ABSTRACT

*International joint ventures (IJVs) is the one mode of foreign direct investment used by most of foreign firms from developed countries to enter developing countries. However, to date, the literature shows that there is a lack of knowledge in response to the relative importance of host country location factors of IJV formation especially in the ASEAN countries. This is a pioneering attempt by using Thailand as the representative example. The results show that the most important factors affecting foreign companies' location choice are future market expectations in the region, lower labour costs, and favourable infrastructure. Also, the findings reveal that the variation of the relative importance of host country location factors according to industrial sector and nationality of the IJV foreign parent company cannot be found.*

**Keywords:** Thailand; Host Country Location Factor; Foreign Direct Investment; International Joint Ventures

## 1. INTRODUCTION

OECD (2004) reports the FDI inflows of the Association of Southeast Asian Nations (ASEAN) countries, especially the high-performing economies of the ASEAN4 countries, namely Thailand, Malaysia, Indonesia and The Philippines have dramatically grown since the 1980s and this is perhaps the region of developing countries that has been the most successful in attracting foreign direct investment and in incorporating foreign firms into national developing strategies.

Thailand has been the foremost foreign direct investment (FDI) recipient among the ASEAN4 countries (UNCTAD, 2007) – numbering for about half of the total flows to ASEAN4. FDI inflows to Thailand have increased substantially since the second half of the 1980s, after the currency appreciation in Japan and that in the first tier newly-industrialising economies (NIEs) of Taiwan, Singapore, Hong Kong, and South Korea. During the late 1980s, Thailand attracted, on average, US\$ 1 billion per year of net FDI inflows, and these reached US\$ 2 billion per year during the first half of the 1990s. This trend jumped to around US\$ 5 billion in the second half of the 1990s, and increased dramatically after 2000, with average FDI of US\$ 11 billion per annum, rising to US\$ 20 billion in 2006, an all-time record for Thailand (Bank of Thailand, 2007; Suwannarat *et al*, 2010). Hence, FDI has played an important role in the economic development of the region. As well, the increasing trend of the international joint ventures, one type of FDI, in the ASEAN4 also shows a similar figure (Julian, 2005; Suwannarat *et al*, 2010)

However, it can be seen that there is a paucity of literature relating to the relative importance of host country location factors for IJV formation especially in the ASEAN countries. The main considerations relating to this issue are normally found in the context of research into foreign direct investment (FDI) in general (for example, Vernon, 1974; Davidson, 1980; Dunning and Zhang, 2008). Accordingly, this article builds on the few prior studies of IJV formation in the context of the ASEAN4 countries by using Thailand as a representative example. It presents new data and new empirical insights into the relative importance of host country location factors for IJV formation in the Southeast Asian country of Thailand.

The rest of this article are organised in the following. Section 2 presents the hypotheses development of the study. The statistical analysis method is shown in section 3. Section 4 sets out for the findings and discussion, whilst the conclusions are presented in section 5.

## 2. LITERATURE REVIEW AND HYPOTHESES

### IJV Definition

Kogut (1988) defines joint ventures as being when two or more firms pool a portion of their resources within a common legal organisation, whereas Pfeffer and Nowak (1976) defines joint ventures as the legal and economical separate organisational entities created by two or more parent organisations which collectively invest capital and other resources to pursue certain strategic objectives. In addition, a joint venture is regarded as an international joint venture (IJV) if at least one parent has its headquarters outside the venture's country of operation, or if it has an important level of operation in more than one country (Geringer and Herbert, 1989). Shenkar and Zeira (1987) also define IJVs as "a separate legal organisational entity representing the partial holdings of two or more parent firms, in which the headquarters of at least one is located outside the country of operation of the joint venture. This entity is subject to the joint control of its parent firms; each of which is economically and legally independent of the other" (Shenkar and Zeira, 1987: 547).

### Host Country Location Factors and Industrial Sector

Dunning (1996, 1998) asserts that the location-specific characteristics which contribute to competitive advantages of the MNEs will vary for different sectors. Likewise, a number of researchers (Mann, 1993; Ulgado, 1996) argue that the foreign direct investment behaviours and the relative importance of the location factors of the MNEs are influenced by industrial factors. This results from a notion that such researchers contend that MNEs' choices of location are industry-specific as they look for the locations that are most facilitative and fit with the nature or characteristics of their businesses. For instance, Ulgado (1996) studies the FDI in the United States and finds that the relative importance of the host country location factors are significantly different due to the industrial sectors of the MNEs. That is, firms in the rubber and plastics industry are most concerned with the location factor of skilled labour, whilst the electronic firms consider the location factor of tax incentives to have the highest level of importance. These literatures result in the establishment of the following first hypothesis.

*H 1: The relative importance of host country location factors for the IJV formation will vary according to the IJV industrial sector.*

### Host Country Location Factors and Nationality of the IJV Foreign Parent Company

Many researchers (Friedman *et al*, 1992; Dunning, 1996, 1998) argue that the importance of the location factors can differ according to the countries of the foreign investors. National differences result from a myriad of cultural and economic influences translated into variation in firm behaviours regarding the location choice (Ulgado, 1996). Further, Tong (1979); and Chernotsky (1983) have found from their studies that firms with different nationalities weigh location factors differently. This is also supported by the findings of Friedman *et al* (1992) that show the relative importance of the location factors are different between the Japanese and European MNEs.

Ulgado (1996); Ulgado and Lee (2004) also find that the relative importance of the host country location factors of the United States vary according to nationality of the firms. For instance, Japanese firms significantly prioritise the attitudes of local governments, the attitudes of local citizens, the availability of transportation services, and the employee training incentives correspondingly. Meanwhile, German companies tend to considerably weigh the level of unionisation, the labour turnover rate, the attitude of local government, and the transportation service availability as important factors respectively. Zhao and Zhu (2000) study FDI in different locations over a four-year period and find that the location-specific factors vary significantly among foreign investors. These lead to the second hypothesis.

*H 2: The relative importance of host country location factors for the IJV formation will vary according to the nationality of the IJV foreign parent company.*

## 3. RESEARCH METHODS

To test the established hypotheses, three different sets of the statistical tests have been adopted to use. First, the measure of central tendency of mean and the measure of dispersion of standard deviation have been conducted to measure the relative importance of the host country location factor and the host country investment incentive scheme. Second, the analysis of variance (ANOVA) test

and equivalent test have been used to test the significance of the mean differences of the individual variables in each category to test hypotheses.

A large number of researchers (Easterby-Smith et al, 2003; Chen and Glaister, 2005; Field, 2005) argue that if the sample size exceeds 30, it is reasonable to assume that the sample is from a normal distribution; parametric tests can be adopted to use. However, both parametric tests (either two sample t-test or ANOVA test) and the equivalence of the non-parametric test such as Mann-Whitney U test and Kruskal-Wallis H test have also been conducted to remove any doubts, which might arise from the nature of data.

Further, it can be seen that the data show the likelihood of overlapping or relatedness of the variables in each category. The exploratory factor analysis (EFA) technique of Anderson-Rubin method has been used to create a parsimonious set of distinct non-related variables. Tabachnick and Fidell (2001); Field (2005) suggest that this method is a suitable option when uncorrelated scores are required. The EFA method will be applied with the set of variables of the host country location factors. Subsequently, the significant mean score difference of the underlying factors analysed by the EFA technique has been tested to test two hypotheses. However, to accept these hypotheses, the outcomes of the significant mean differences must fully depend on the significant difference of their underlying factors rather than those of the individual variables because the EFA technique has already combined the correlated individual variables into the same factor. Many researchers (Boateng and Glaister, 2003; Chen and Glaister, 2005) argue that the accurate significance can be obtained from outcomes of the underlying factors.

#### **4. THE RESULTS AND DISCUSSION**

##### **The Relative Importance of Host Country Location Factors**

The rank of the mean scores of the relative importance of the host country location factors for the IJV formation is shown in Table 1. These data have been obtained from the mailed questionnaire. The target respondents have been asked to rate the importance of each factor on a five point Likert scale ranging from not important to very important. The median value of the five-point Likert scales is 3. All location factors exceed this median value, except for the factor of access to local capital.

The most important factors affecting foreign firms' location choice are future market expectations in the region (4.18), lower labour costs (3.91), and favourable infrastructure (3.84). The data indicate that other major factors influencing MNEs' decision to select Thailand as host country include market size (3.67), skilled labour (3.66), political and economic stability (3.66), assistance and incentives of the Thai government (3.64), cheap raw materials (3.64), and liberal foreign exchange control and the possibility of remitting profits (3.64). Below these factors come the favourable geographical location of Thailand (3.61), the existence of strategic Thai parents (3.59), Thai society and culture (3.55), matching competitors' strategies in this country (3.35), and a means to overcome trade barriers (3.23).

The fact that future market expectations in the region turns out to be the most important motivating factor demonstrates that MNEs view ASEAN economies as having favourable future prospects. Not surprisingly the ASEAN economies have grown dramatically since the 1980s (OECD, 2004). This result is consistent with the findings in the literature on host country location factors for FDI in general, which indicates that many MNEs use Thailand as their main offshore production location as well as a centre for distributing their products to other countries in the region because of Thailand's geographical advantages (Suwannarat et al, 2010).

One can also find support for the importance of lower labour costs and good infrastructure. Buurman and Rietveld (1999) find that infrastructure, especially roads and ports in Thailand, have a positive impact on MNEs' choice of location for FDI, and labour cost also appears to be a very important location factor for Thailand. There is also support for market size, availability of Thai skilled labour, political and economic stability. Michener and Ramstetter (1990) cited in Julian (2005) surveyed the FDI motives of Japanese firms operating in Thailand and found that that Japanese MNEs identified access to favourable production resources, access to the market as their principal motives for inward investment. This also corresponds to a report by the Japanese Bank for International Cooperation (JBIC) which found that Thailand was a very attractive country for Japanese manufacturing firms, and was one of the five most attractive countries for Japanese outward FDI, especially manufacturing, due

to its low labour cost, good market potential, and political and social stability (Brimble and Urata, 2006).

**Table 1: The Rank of the Importance of Host Country Location Factors by Mean Scores**

Host Country Location Factor	Rank	Mean	SD.
Future market expectations in the region	1	4.18	0.72
Lower labour cost	2	3.91	0.95
Favourable infrastructure	3	3.84	0.73
Market size	4	3.67	0.83
Availability of Thai skilled labour	5	3.66	0.78
Political and economic stability	5	3.66	0.78
Thai government incentives and assistance	7	3.64	0.97
Cheap raw material	7	3.64	0.96
Liberal foreign exchange control and possibility of remitting profits	7	3.64	0.78
Favorable geographical location and distance	10	3.61	0.84
Existence of suiTable Thai parent	11	3.59	0.96
Thai society and culture	12	3.55	0.76
Matching competitors' strategies	13	3.35	0.97
To overcome entry barriers	14	3.23	0.94
Access to local capital	15	2.95	0.98

NB: 1. N=88

2. The Mean is the average on scale ranging from 1=is not important at all to 5=is very important

3. SD=Standard Deviation

Further, data show that there are a great number of correlations among the individual location factors. Thus, the factor analysis technique has been used to combine these correlated variables into the same category and to create a parsimonious set of distinct non-correlated variables from the full set of location factors. The exploratory factor analysis (EFA) via varimax rotation is used to create the following set of factors. Initially, factor analysis technique has produced five underlying factors. However, a content analysis has been conducted to affirm the consistently substantive meanings of the underlying factors, with each factor is made up of the individual variables. Many researchers (Zou *et al*, 1997; Tatoglu and Glaister, 2000) use this method arguing that this can detect the unreasonable variables in each underlying factor that can lead to the misinterpretation of the meaning of the underlying factors.

The refinement process results in the removal of one unrelated individual variable: the existence of suitable Thai parent location. The remaining 14 individual variables are re-computed with the EFA and have finally created three underlying factors. These factors can make a good explanation with a total of 56.84 percent of the observed variance as well as the high reliability of cronbach alpha values ranging from 0.70 to 0.80 as shown in Table 2. Three underlying location factors include the regional future market potential and the host country characteristics; the favourable location and cost management advantage factor; and the market size and strategic management advantage.

The outcomes of the first hypothesis (H1) testing are presented at Table 3 and Table 4. Table 3 illustrates the mean score comparison of the underlying host country location factors in response to industrial sectors with the F-value of ANOVA test and the Chi-square value of Kruskal Wallis test. The finding shows that there is no support for hypothesis 1 in that the relative importance of host country location factors does not vary according to the industrial sectors. Among the three underlying factors, it indicates that none of them yields significant mean score differences in each industrial sector.

With regard to the original 15 individual variables of the location factors, it appears that only the relative importance of the individual factor of 'favourable infrastructure' has significant mean score differences according to industrial sectors as shown in Table 4. The data show the significance of the parametric test of 2.67 F-values and non-parametric test of 11.85 Kruskal Wallis values at 0.05 significant level. The greatest mean score can be found from IJV firms in the chemicals, paper, and plastics sector with 4.44 mean score and 0.73 standard deviation value, whilst the relative importance



of the favourable infrastructure of the IJV companies in the services and public utilities sector shows the least mean score of 3.50, and 0.93 value of standard deviation.

The results from the second hypothesis (H2) testing can be found from Table 5 and Table 6; the data show that the second hypothesis (H2) can be rejected. Hence, the relative importance of host country location factors do not vary according to the country of origin of the IJV foreign parent companies since there are no significant mean score differences among the relative importance of the underlying location factors in each category of the nationality of the IJV foreign parent company. This can be seen in Table 6.

**Table 2: Factor Analysis of Host Country Location Factors**

Factors	Factor Load	Eigen Value	% Variance Explain	Cum Percent	Cronbach Alpha
<b>Factor 1: Regional Future Market Potential and Host Country Characteristics</b>		2.70	19.25	19.25	0.80
Future market expectations in the region	0.85				
Favourable infrastructure	0.67				
Political and economic stability	0.66				
Thai society and culture	0.59				
Thai government incentives and assistance	0.50				
<b>Factor 2: Favourable Location and Cost Management Advantage</b>		2.70	19.22	38.47	0.70
Access to local capital	0.78				
To overcome entry barriers	0.62				
Favorable geographical location and distance	0.61				
Cheap raw material	0.53				
Lower labour cost	0.47				
<b>Factor 3: Market size and Strategic Management Advantage</b>		2.57	18.37	56.84	0.75
Matching competitors' strategies	0.78				
Market size	0.76				
Liberal foreign exchange control and possibility of remitting profits	0.65				
Availability of Thai skill labour	0.64				

**NB:** Principle component factor analysis with varimax rotation  
K-M-O Measure of Sampling Adequacy = 0.80  
Barlett Test of Sphericity = 429.90,  
p<0.000

However, the result in Table 6 shows the significant mean score differences of the individual location factor of Thai society and cultures according to the nationality of the IJV foreign parent company with 2.85 F-value and 11.97 Chi-square value of Kruskal Wallis test at 95% of the confident interval. The relative importance of the individual location factor of Thai society and culture of the IJV firms with the EU parent companies yields the highest mean scores of 3.82 with 0.87 standard deviation, followed by that with the Japanese parent companies (mean score=3.64, 0.75 standard deviation), and the NIEs parent companies (mean score=3.57, 0.53 standard deviation) respectively. The IJV companies with the North American parent companies show the lowest mean score of 2.89 with 0.60 standard deviation.

**Table 3: The Mean Scores Comparison of the Underlying Host Country Location Factors with Industrial Sector**

Industrial Sector	Statistic Value	Factor 1 Regional Future Market Potential and Host Country Characteristics <sup>1</sup>	Factor 2 Favourable Location and Cost Management Advantage <sup>2</sup>	Factor 3 Market size and Strategic Management Advantage <sup>3</sup>
Agriculture and Agricultural Products	Mean	3.25	3.25	3.44
	SD	0.54	0.78	0.86
Light Industry	Mean	3.83	3.49	3.9
	SD	0.75	0.79	0.8
Metal Products, Machinery and Transport Equipment	Mean	3.8	3.49	3.56
	SD	0.51	0.58	0.61
Electronic Industry and Electrical Appliance	Mean	3.8	3.49	3.44
	SD	0.77	0.79	0.51
Chemicals, Paper and Plastics	Mean	4.07	3.73	3.69
	SD	0.45	0.42	0.51
Service and Public Utilities	Mean	3.5	2.9	3.31
	SD	0.53	0.2	0.31

**NB:** <sup>1</sup>F-Value= 2.01 and Chi-Square of Kruskal Wallis Test=9.56

<sup>2</sup> F-Value= 1.18 and Chi-Square of Kruskal Wallis Test=7.53

<sup>3</sup>F-Value= 0.95 and Chi-Square of Kruskal Wallis Test=4.73

**Table 4: The Mean Scores Comparison of the Individual Host Country Location Factor: Favourable Infrastructure with Industrial Sector**

Individual Host Country Location Factor	Industrial Sector	Mean	Std. Deviation	F Value/Chi- Square <sup>a</sup>
Favorable infrastructure	Agriculture	3.50	0.93	2.67*/11.85*
	Light	4.00	0.74	
	Metal	3.76	0.65	
	Electronic	4.00	0.71	
	Chemicals	4.44	0.73	
	Services	3.25	0.50	
	Total	3.84	0.73	

**NB:** \*p<0.05, <sup>a</sup> Kruskal Wallis Test

The study also finds that relative importance of the host country location factors for the IJV formation does not vary according to the IJV industrial sectors and the country of origin of the IJV foreign parent companies. These findings are inconsistent with the previous researches of the location factors for the general FDI (see, for example, Tong, 1979; Chernotsky, 1983; Ulgado, 1996; Ulgado and Lee, 2004). To analyse, the difference of the relative importance of the location factors for FDI based on different industrial sectors and the nationality of the foreign firms stated in the literature might not necessarily give the same results with the study of the relative importance of the location factor for IJV formation. Hence, future research plus in-depth interviews are highly encouraged to be conducted to retest the outcomes in these notions since this study is the pioneering attempt.

**Table 5: The Mean Scores Comparison of the Underlying Host Country Location Factors with Nationality of the Foreign Parent**

Country of Origin	Statistic Value	Factor 1 Regional Future Market Potential and Host Country Characteristics <sup>1</sup>	Factor 2 Favourable Location and Cost Management Advantage <sup>2</sup>	Factor 3 Market size and Strategic Management Advantage <sup>3</sup>
Japan	Mean Std. Deviation	3.79 0.60	3.47 0.61	3.61 0.61
North America	Mean Std. Deviation	3.56 0.77	3.24 0.73	3.39 0.88
EU	Mean Std. Deviation	3.85 0.59	3.55 0.68	3.64 0.72
NIEs	Mean Std. Deviation	3.91 0.55	3.77 0.73	3.68 0.62
Others	Mean Std. Deviation	3.57 0.27	3.27 0.50	3.50 0.40

**NB:** <sup>1</sup> F-Value= 0.64 and Chi-Square of Kruskal Wallis Test=1.91

<sup>2</sup> F-Value= 0.87 and Chi-Square of Kruskal Wallis Test=2.15

<sup>3</sup> F-Value= 0.30 and Chi-Square of Kruskal Wallis Test=0.63

**Table 6: The Mean Scores Comparison of the Individual Host Country Location Factor: the Characteristics of Thai Society and Culture with Nationality of the Foreign Parent**

Individual Host Country Location Factor	Country of Origin	Mean	Standard Deviation	F Value/Chi-Square <sup>a</sup>
The characteristics of Thai society and culture	EU	3.82	0.87	2.85*/11.97*
	Japan	3.64	0.75	
	NIEs	3.57	0.53	
	North America	2.89	0.60	
	Others	3.17	0.41	
	Total	3.55	0.76	

**NB:** \*p<0.05, <sup>a</sup> Kruskal Wallis Test

## 5. CONCLUSIONS

This study examines of the host country location factors that influence the decision of the MNEs to enter into the IJV formation in ASEAN countries especially the high-performing economies of the ASEAN4 countries, namely Thailand, Malaysia, Indonesia and The Philippines by using Thailand as a focus of the study. It has been conducted based on the theoretical framework of foreign direct investment (FDI) versus the host country location factors affecting the IJV formation. According to this notion, a number of researchers (Vernon, 1966; Dunning, 1998) argue that the MNEs will seek locations of which the host country location factors offer the best economic and institutional facilities, which enable their core competencies to be efficiently utilised. This is viewed to increase success of their business operations.

Also, this result of the study would suggest that many of the IJVs in Thailand are market-seeking identified by Dunning (1996 and 1998 cited in Suwannarat et al, 2010). Market size is clearly of great importance and Indro and Richards (2007) cite the World Bank statistical report on the growth rate of 200 countries in the 1990s which shows the ASEAN4 among the top 15. This points towards an

“increasing standard of living that potentially gives these countries’ citizens greater purchasing power” (Indro and Richards, 2007: 178), suggesting the ASEAN4 are likely to offer significant business opportunities due to their increasing market size. This view is supported by the UNCTAD report (2006), which notes that the importance of this region in the world economy and its high growth rate has made it more attractive to “market-seeking FDI” (UNCTAD, 2006: 50).

To study the host location factors of the IJV formation, a number of researchers (Chen and Glaister, 2005) argue that the existing literature of the host country location factors for the IJV formation is deficient, and they presently study this notion in the framework of the location factors of the general foreign direct investment. This study also adopts this view. Also, the literature shows that there is a lack of knowledge to identify the location factors that influence the MNEs to enter into the IJV formation especially in the ASEAN region as well as Thailand. To focus on these issues, hence, this article provides new empirical knowledge in these notions.

The findings indicate that the most important host country location factors that influence the foreign firms to enter into the IJV formation in Thailand include the future market expectations in the region, followed by lower labour cost, favourable infrastructure, the market size, and availability of the local skilled labour respectively. However, the outcomes also show that the variation of the relative importance of the host country location factors for the IJV formation according to the IJV industrial sectors (the first hypothesis: H1) and the country of origin of the IJV foreign parent companies (the second hypothesis: H2) cannot be found. This is inconsistent with the previous researches.

In the future research, moreover, to extend the notion of this study, more information from foreign parent companies should be brought into consideration. This is believed that by eliciting data from the foreign parent companies, the future research might yield a clearer result. The outcomes of this study, however, are mainly derived from the data provided by IJV managers, who take care of IJVs for both sides of parent companies and have been assumed to reflect the same business viewpoints and strategies as those of their parent firms (Geringer and Herbert, 1991); therefore, the inconsistency between the results for both hypotheses and those of previous IJV research might result from this nature.

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# A MULTI-ATTRIBUTE COMPARISON OF U.S. AND CHINESE E-TAIL WEBSITE DESIGN

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## ABSTRACT

*In this study, 17 website design attributes identified by previous studies are used to compare e-tail (online retailing) websites from the U.S. and China. We linked these website design attributes to Hofstede's (1980) four cultural dimensions: individualism/collectivism, power distance, uncertainty avoidance, and masculinity/femininity. Based on a content analysis of 100 e-tail websites, 50 from the U.S. and 50 from China, we found that, due to cultural differences, U.S. and Chinese e-tail websites significantly differ in terms of website design attributes. Managerial implications are discussed to show how e-tail website design can be effective, taken into consideration cultural factors.*

**Keywords:** Website Design, China, Online Retail, Web Security, Customer Service, Culture

## 1. INTRODUCTION

Online retailing, commonly referred to as e-tail, has maintained a rapid growth in the beginning of the new century, becoming a major force for the expansion of the service industry. Online shopping is becoming the most popular and convenient way for consumers to purchase various goods and services (Gunderson 2004; Swartz 2004), and recent studies found that consumers' online shopping motives increasingly lean toward entertainment and enjoyment (Childers et al. 2001; Fiore, Jin, and Kim 2005; Tsang and Tse 2005). Thus, it is important for the e-tail firms to realize the benefits of designing consumer-oriented websites that offer shoppers the most enjoyable experience of online shopping. Along with the rapid growth of the industry, e-tail website design has been evolving into a stage of rich multi-media. The online population in the United States increased nearly fifty percent from 142 million in 2001 to 211 million in 2006 (GoECart.com 2006). In China, the online population increased nearly five times from 23 million in 2000 to 123 million in 2006 (Internet World Stats 2006). It will be valuable to study how e-tail website design differs in these two large markets. The objective of the study is to identify cross-cultural differences in e-tail website design between the U.S. and China. From a marketing perspective, understanding website design differences and recognizing the patterns of such differences will not only contribute to ongoing research in the areas of retailing and information systems, but also substantially assist marketing practitioners in designing e-tail websites across borders.

## 2. RESEARCH FRAMEWORK AND HYPOTHESES

### 2.1. Website Design Attributes

To identify cross-cultural differences in e-tail website design, obtaining a full list of relevant, applicable website design attributes is crucial for the purpose of comparison. Liu, Arnett and Litecky (2000) used both expert judgment and end-user responses in analyzing website design and found that information quality, learning capabilities, playfulness, system quality, system use, and service quality are the key to website design. The Webby Awards (2001) analyzed various criteria based on expert judgments and concluded that website design should be based on six factors: content, structure and navigation, visual design, functionality, interactivity, and overall experience. Turban and Gehrke (2000) studied website design on the basis of over 90 articles in trade journals, and after examining the expert viewpoints in these articles, they identified 38 variables that fall in 5 main categories: page loading (e.g., limiting the use of animation and graphics), business content (e.g., clear & concise text and contact information), navigation (e.g., accurate links and avoidance of the use of frames), security (e.g., protection of copyrights), and marketing/consumer focus (e.g., site promotion and giving users something to do). Maldonado and Minor (2003) conducted e-tail website design analysis in the U.S. and Mexico with additional variables beyond Turban and Gehrke (2000), including sound, splash screen, logo appearance,



product appearance, return policies, delivery services, and product warranty. From previous studies, we compiled a list of 17 website design attributes that are related to multi-media, navigation, and business and legal contents. The 17 design attributes are summarized in Table 1.

Table 1 - e-Tail Website Design Attributes \*

ATTRIBUTE	DESCRIPTION	VALUES
<b>MEDIA RICHNESS</b>		
Number of text clusters	Number of text areas that are separated or highlighted by color, borders, regions, or lists. Exclude hyperlink clusters and clusters without text in them.	Numeric
Number of elements with animation	Number of text or graphic elements that have animation or constant movement.	Numeric
Number of graphs and images in Home Page	Number of objects (images, graphs, pictures, etc) that appear in the Home Page. Logos are not considered. Include graphics that are also links.	Numeric
Number of colors used in Home Page	Number of different colors used in the Home Page. If there is the same color but two different shades (light and dark) then they are considered as two. In case of color degradation, also it is considered as two. Colors in logos, pictures, graphs and images are not considered.	Numeric
Background texture in Home Page	Whether plain, or not plain. If no texture, and only one color is considered plain. Considered only for the Home Page.	Plain = 0 Non plain = 1
Pop up ads	Specifies if pop-up ads are displayed when the site is accessed.	Yes = 1 No = 0
Sound	Can be Music, Non music or none. Duration of the sound is not considered, only presence or absence.	Music = 2 Non music = 1 None = 0
<b>NAVIGABILITY</b>		
Search engine	Specifies whether the Home Page has a search engine capability.	Yes = 1 No = 0
Site map	Whether a site map of the site can be accessed.	Yes = 1 No = 0
Consistent design in all pages	Specifies if all pages in the site have similar design characteristics, like the same colors or the same arrangement of items.	Yes = 1 No = 0
Number of text and graphic links	Number of hyperlinks that consist of a text element or a graphic or image element.	Numeric
<b>BUSINESS FORMALITY</b>		
Contact	Specifies whether or not there is a way to contact (e-mail) the organization, or to give suggestions about the site or the organization.	Yes = 1 No = 0
Customer Service	Specifies if the site can be used to have customer service on line.	Yes = 1 No = 0
Language selection	Specifies whether or not the site can be accessed in another language besides the one used as default.	Yes = 1 No = 0

Logo appearance in Home Page	Specifies whether or not the logo of the organization appears in the Home Page.	Yes = 1 No = 0
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### **LEGAL FORMALITY**

Security site	Whether information is given in the site about site security.	Yes = 1 No = 0
Copyright notice	Whether the site specifies that the information in the website is copyright and should not to be used for any other purpose.	Yes = 1 No = 0

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\* Adapted from Turban and Gehrke (2000) and Maldonado and Minor (2003).

## **2.2. Cultural Analysis**

Culture is defined as “the collective programming of the mind that distinguishes the members of one category of people from those of another” (Hofstede and Bond 1988, p. 6). In social and individual psychology, culture has been found to explain human behavior because behavior is shaped by the collective learning process within a cultural group (Goodnow 1990; Shweder 1990; Berry et al. 2002). In recent marketing research, culture analysis has offered explanations of the differences in cross-cultural consumer behavior (e.g., La Ferle, Edwards, and Mizuno 2002; Lim et al. 2004). In the past decades, scholars have proposed several categories of cultural dimensions used to analyze cross-cultural phenomena (e.g., Hofstede 1980; Hall and Hall 1990; Triandis 2000). One of the most widely used set of dimensions in the area of marketing is Hofstede’s (1980) four cultural dimensions: power distance, uncertainty avoidance, masculinity-femininity, and individualism-collectivism. Previous studies have investigated whether the characteristics in national culture identified by Hofstede’s (1980) reflect the differences in the website contents (e.g., Robbins and Stylianou 2001; Singh and Matsuo 2002), and revealed that cultural characteristics is an important aspect of determinants to website design and usage. Taking into consideration the impact of Hofstede’s (1980) findings on cultural dimensions, this study attempted to utilize the 4 cultural dimensions as the theoretical foundation to explain the cross-cultural differences existing in the 17 e-tail website design attributes.

## **2.3. Uncertainty Avoidance and Website Design**

The degree to which uncertainty and ambiguity are tolerated in a society is conceptualized as uncertainty avoidance (Hofstede 1980). Consumers in a high uncertainty avoidance society prefer clear directions and easy instructions (Gudykunst 1998). Such consumers incline to seek advice from experts in ambiguous situations in the marketplace because of high level of anxiety (Gudykunst 1998). Compared to the Chinese, the Americans have less tolerance for uncertainty and higher need for controlling risk (Nicholson and Stepina 1998). It is likely that U.S. e-tailers are more concerned about providing abundant information that can guide easy shopping and consumers’ decision making, and offering search engines and site maps to assist shoppers’ online exploration. Thus, compared to their Chinese counterparts, U.S. e-tail websites tend to present more text clusters, images, and hyperlinks in order to offer clear and easy guidance, and have consistent design in all pages in order to reduce the informational inconsistency of the web pages. We hypothesize that:

- H1: U.S. websites are more likely to have consistent design in all pages than Chinese websites.
- H2: U.S. websites are more likely to have a greater presence of text clusters than Chinese websites.
- H3: U.S. websites are more likely to have a greater presence of graphs and images than Chinese websites.
- H4: U.S. websites are more likely to have a greater presence of total hyperlinks than Chinese websites.
- H5: U.S. websites are more likely to have search engine than Chinese websites.
- H6: U.S. websites are more likely to have site maps than Chinese websites.

## **2.4. Individualism/Collectivism and Website Design**

An individual’s relationship with the society can be characterized by individualism or collectivism (Hofstede 1980). Individualistic societies tend to believe that “self” comes first and everyone has a right to

privacy, while collectivistic societies tend to allow little privacy because groups and organizations to which one belongs are superior over private life (Hofstede 1980). Since the Americans are said to be more individualistic than the Chinese (Nicholson and Stepina 1998), it is likely that, compared with their Chinese counterparts, the U.S. e-tail websites would pay more attention to the presence of their self-image as well as their legal rights, and also are more concerned about website security that safeguards consumers' private information. We hypothesize that:

H7: U.S. websites are more likely to have logo appearance than Chinese websites.

H8: U.S. websites are more likely to present copyright clause than Chinese websites.

H9: U.S. websites are more likely to have security provisions than Chinese websites.

## **2.5. Masculinity/Femininity and Website Design**

The degree to which a society is featured by assertiveness versus nurturance can be reflected in the abstract level of masculinity versus femininity (Hofstede 1980). Masculine individuals tend to focus on visible and symbolic belongings, while feminine individuals tend to emphasize on invisible benefits such as interpersonal relationships (Thatcher et al. 2003). Extending this contention to the societal level, a masculine society likes to pay attention to instant, visible cues in business whereas a feminine society focuses more long-term measures in business. The Chinese society was found to be more masculine than the American society (Nicholson and Stepina 1998). In China, it is likely that the e-tail websites use pop up ads to attract the customers more frequently than do their U.S. counterparts. Similarly, eye-tracking contents such as animations, flash contents, and colorful backgrounds can also be regarded as valuable for a masculine society like China. Therefore, we hypothesize that:

H10: Chinese websites are more likely to have background textures than U.S. websites.

H11: Chinese websites are more likely to have greater presence of text colors than U.S. websites.

H12: Chinese websites are more likely to have the presence of sounds than U.S. websites.

H13: Chinese websites are more likely to have greater presence of elements with animation than U.S. websites.

H14: Chinese websites are more likely to have pop up ads than U.S. websites.

## **2.6. Power Distance and Website Design**

The degree to which an individual respects authority in a society can be measured by power distance (Hofstede 1980). According to Hofstede (1980), people in a high power distance society accept the authority of superiors, while people in a low power distance culture expect equality and democratic participation. Previous research suggested that the U.S. society has relatively low power distance among the citizens, while the Chinese society is characterized by a vertical societal structure (Nicholson and Stepina 1998). Thus, it is likely that U.S. e-tail websites are more concerned about offering online customer service in order for the shoppers to give opinions, complaints, and feedback, and they are also more likely to encourage the shoppers to engage in two-way communication by providing full contact information. On the contrary, Chinese e-tail websites tend to assume only a one-way communication mechanism from the websites to the shoppers. It is also likely that U.S. e-tail websites are more concerned about the availability of different languages that may be used by different people in different cultures or subcultures because of the concern of equality. We hypothesize that:

H15: U.S. websites are more likely to provide customer service than Chinese websites.

H16: U.S. websites are more likely to have contact information than Chinese websites.

H17: U.S. websites are more likely to provide language selection availability than Chinese websites.

## **3. RESEARCH METHODOLOGY**

We selected 100 e-tail websites for the statistical analysis of cross-cultural differences in website design. We used 50 Chinese e-tail websites in the field of online apparel retail. The websites were obtained through the search on baidu.com, the largest search engine in China. We also used 50 U.S. e-tail websites in the same retail area after performing a search on google.com. In both countries, we used the key word "apparel", respectively in Chinese and in English for the search. The top 50 results from each country were obtained. The e-tail websites were then content analyzed. Thus, our comparison of website design attributes was based on a total of 100 e-tail websites, 50 from each country.

For the categorical variables mentioned in Table 1, chi-square statistic (significance level of 0.05) is used to verify if significant differences exist between the two countries. For the numeric variables mentioned in Table 1, t-test (significance level of 0.05) is used for country-level pair comparisons.

#### 4. RESULTS

Among the first 6 hypotheses with respect to website design differences determined by uncertainty avoidance, H1, H2, H4, H5, and H6 were supported while H3 was not. The chi-square test results showed that U.S. e-tail websites have a higher tendency to have consistent design in all pages ( $t = 7.32$ ,  $p < 0.05$ ), search engine ( $t = 14.68$ ,  $p < 0.05$ ), and site maps ( $t = 13.90$ ,  $p < 0.05$ ) than do Chinese e-tail websites. Our t-test results showed that U.S. e-tail websites have a greater number of text clusters ( $t = 9.33$ ,  $p < 0.05$ ) and total hyperlinks ( $t = 12.24$ ,  $p < 0.05$ ) than do Chinese e-tail websites. However, although U.S. e-tail websites had a greater number of graphs and images than did Chinese e-tail websites in the sample, the result was not significant ( $t = 1.12$ ,  $p > 0.05$ ).

H7, H8, and H9 were used to argue that a society's individualism/collectivism orientation influences e-tail website design. Our results showed that all the 3 hypotheses were supported. Chi-square test results revealed that U.S. e-tail websites have a higher tendency to present logo ( $t = 6.24$ ,  $p < 0.05$ ), copyright clause ( $t = 13.08$ ,  $p < 0.05$ ), and website security information ( $t = 11.19$ ,  $p < 0.05$ ) than do Chinese e-tail websites.

We further examined if masculinity/femininity of a society is associated with the use of certain e-tail website design attributes. We made 5 hypotheses (H10-H14) and our results supported 3 of them. H11 and H12 were not supported. Our chi-square test results showed that Chinese e-tail websites have a significantly greater presence of background textures ( $t = 5.48$ ,  $p < 0.05$ ) and pop up ads ( $t = 15.04$ ,  $p < 0.05$ ) than do U.S. e-tail websites. Meanwhile, Chinese e-tail websites also have a larger number of animated elements than do U.S. e-tail websites ( $t = 6.48$ ,  $p < 0.05$ ). However, Chinese and U.S. websites showed no difference in terms of text colors ( $t = 2.33$ ,  $p > 0.05$ ) and the use of sounds ( $t = 1.43$ ,  $p > 0.05$ ), rendering no support for H11 and H12.

Lastly, concerning H15, H16, and H17 that were proposed to link power distance with website design attributes, our chi-square results showed that U.S. e-tail websites have a higher tendency to provide online customer service ( $t = 11.19$ ,  $p < 0.05$ ) and language selection ( $t = 17.22$ ,  $p < 0.05$ ) than do Chinese e-tail websites. However, the difference was not significant for the test of providing contact information although we found a slightly larger number of U.S. e-tail websites in the sample that had contact information than Chinese e-tail websites in the sample ( $t = 1.43$ ,  $p > 0.05$ ). Thus, H15 and H17 were supported and H16 was not.

Overall, among the 17 attributes being examined, our results showed that there are cross-cultural differences exhibited in 13 of them. In general, we found a pattern that associates cultural characteristics with website design attributes.

#### 5. DISCUSSION

The results showed that U.S. and Chinese e-tail websites have remarkable differences in their website design. People might imagine that economic and technological impacts can be major factors in differentiating website design between developed and developing countries. The U.S. certainly has a better infrastructure in respect to speed in communication lines as well as in quality and quantity of computer equipments. For example, in the U.S. there were about 65 PCs per 100 individuals in 2002, compared to China's 3 per 100. Similarly, in 2002 the U.S. had 3,999 internet hosts and 5,375 internet users per 10,000 individuals but China had only 1.22 internet hosts and 460 internet users per 10,000 (International Telecommunications Union 2002). Given this gap in internet development level, people may intuitively conclude that Chinese e-tail websites are less likely to feature multi-media characteristics in their website design. However, these suppositions did not seem to be true. Our results suggested that the rich media features of e-tail websites, such as the use of animations, are more likely to be employed by

Chinese websites. In this context, we found that cultural characteristics play a significant role in determining the use of certain website design attributes.

This study produced similar results with Maldonado and Minor (2003) in terms of how cultural differences determine website design patterns. By the combination of the two studies, it can be seen that the website design attributes of the U.S., Chinese, and Mexican e-tail websites do not have fundamental differences determined by macro economy and technology. However, cultural characteristics seem to be an important factor in differentiating how website design is done.

The four dimensions in Hofstede's (1980) national culture analysis were used as our theoretical foundation. Our study showed that culture subtly affects how business operates. The findings revealed a dissimilar pattern of e-tail website design in the U.S. and China, reflecting the philosophical differences in online retail services in terms of both hardware and software. This indicates that one type of website design cannot be used in all countries without investigation of cultural similarities and dissimilarities. Beyond the aesthetic heritages, idiosyncrasies, and tastes within each culture, the findings highlight the importance of the quantitative differences between cultures based on Hofstede's (1980) cultural characteristics. Especially, it suggested that the adoption of rich, advanced aesthetic design attributes, such as background textures and animations, are considered necessary for e-tail websites in China because of the high masculinity embedded in the culture. The findings also implied that in an individualistic culture like the U.S., copyright clause and website security information truly stand for high service quality in the eyes of online shoppers. Thus, how to make an e-tail website culturally friendly seems central to the management of online service quality.

China is making progress of its market economy. Chinese online retailers may still lag behind their U.S. counterparts in terms of service quality and information systems reliability. Along with the fast cultural and social advancement, the concern of the legal rights and obligations as well as the focus on customer service in e-tail website design in China may be raised within the near future. When China's market economy is improved from a micro-economy perspective, the business and legal aspects of website design may look close to those of the U.S. Regardless of when this will happen, it can be argued that cultural influences will have important impact in the process of change. This offers e-tailers a solid theoretical foundation and practical guideline to benchmark their website design.

## **6. LIMITATIONS AND FUTURE RESEARCH**

In this study, we selected 100 e-tail websites for our cross-cultural comparison and analysis through web search. The selected websites may not represent e-tail websites at large, in both countries, since we used the first 50 search results for apparel from each country. In order to get a more representative sample for e-tail websites, a more random sample of websites needs to be considered and compared. Factors such as firm size measured by revenue, product type, and operational style (e.g., brick-and-click or only web presence) should be taken into consideration. Another noteworthy issue is that there are a growing number of foreign e-tail companies that have Chinese websites for their operation in China. For example, eBay.com has its Chinese e-tail website egou.com, which is among the largest and most popular in China. These websites may feature some website design attributes that are similar to those of the parent companies' websites. This issue of cultural adaptation by the foreign-invested e-tail websites should be researched by future studies.

Future research may be focused on the analysis of website design differences between other pairs of countries to evaluate whether the variables used in this study will generate similar results. To validate our contentions that cultural characteristics have impacts on website design, the comparison of the website design attributes for other industries is also worth further investigation.

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# THE IMPACT OF SIZE BIAS ON EMPIRICAL RESEARCH ON STOCK MARKET ANOMALIES: US AND INTERNATIONAL EVIDENCE

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## ABSTRACT

*Using an international Thomson Reuters Datastream database, where size bias is minimized, we show that some specification decisions, and especially those related to size bias, may have a significant impact on asset pricing test results. We use the FF model as test case. We also show that size bias affects the optimal factor portfolio specifications. More specifically, using standard asset pricing models we encounter pricing errors for the ten percent smallest stocks. We, therefore, extend the standard 4-factor model (Carhart, 1997) by two additional risk factors (one size- and one book-to-market factor). This 6-factor model is tested both on US and international data (with 39 countries both developed and emerging) and is able to price the entire size spectrum. We discuss the possible economic explanations of these risk premia for the smallest stocks. The fact that pricing errors are resolved by adding factors rather than characteristics, rules out data problems and information asymmetries as an explanation. Thin trading bias in the beta is also rejected as the source of abnormal returns. Liquidity remains a serious possible candidate, as is the hypothesis of additional downside risk for the smallest firms.*

**Keywords:** *Small firm, CAPM, SMB, HML, WML, momentum, distress, Fama, French*

## 1. INTRODUCTION

The size, book-to-market and momentum anomalies have emerged from empirical CAPM tests (e.g. Banz, 1981; Stattman, 1980 and Rosenberg, Reid and Lanstein, 1985; Jegadeesh and Titman, 1993). These anomalies have subsequently been incorporated into extended versions of the CAPM (e.g. Fama and French (1992, 1993, 1995, 1996a, 1996b, 1998, 2000), Carhart (1997) and Rouwenhorst (1999). However, there are some a priori arguments that suggest it is premature to conclude that these anomalies are robustly incorporated into these extended CAPMs. First, the majority of US-based evidence relies on the CRSP database although there are other high-quality alternatives for US and international data. Also the majority of empirical studies on these anomalies ban the smallest stocks from their research data or, at least, suppress the impact of the smallest stocks on their results. Banz's (1981) evidence suggests that the size effect is not linear and is most pronounced for the smallest firms. Therefore, shunning the smallest stocks from empirical research could wrongfully down tone the evidence on the size effect. This becomes more important if the market exploits the size anomaly, motivated by Banz's evidence. It is true that the smallest stocks often suffer from severe data problems that cannot be ignored, and it is difficult and time consuming to distinguish genuine smallest-stock data from data errors. But, shunning the smallest stocks is as reprehensible as ignoring smallest-stock data errors in exploring the anomalies. This paper contributes by re-studying the post-1980s size, book-to-market and momentum anomalies in the US and internationally (39 countries) based on the Thomson Reuters Datastream database where the size bias and data problems are jointly minimized. More specifically, we did not a priori dismiss or suppress the smallest stocks. We thoroughly screened and filtered for data problems inspired by Ince and Porter (2006). We find that, in the US and internationally, the size effect is largely due to the ten percent smallest stocks, for which we also encounter large pricing errors when using the extended versions of the CAPM. The question naturally arises why these stocks do not fit these models. One possible explanation is *information asymmetries*. These are more of a problem the smaller the stocks: analyst following and press coverage are positively related to size. A second possible explanation is *liquidity*. Amihud and Mendelson (1986), for instance, document that liquidity, as measured by the bid-ask spread, subsumes the size effect in returns from equities. Third, according to Chan, Chen and Hsieh (1985), small companies are more exposed to the changing state of the economy and, therefore, suffer more from *downside risk* and negative shocks. Fourth, it is likely that small stocks are more contaminated with *data errors*; and despite our best efforts we might have missed some of these data errors. Directly testing all these candidate explanations, is difficult since most countries do not have easily available data on bid-ask spreads or proxies for small-business risks. To get at least part of the insights we resort to a shortcut by using the

distinction between a characteristic and a factor (Daniel *et al.*, 1997). In the case of a characteristic, returns are explained by, for example, size or leverage or dividend yield. Such an attribute of the company is very different from a factor: a factor is always time-varying, it is active for many or all stocks, and it is the company's sensitivity to the factor—a covariance—that explains expected returns. Hence, if the explanation is a priced factor, it can be picked up by a portfolio of assets, provided that the return-generating process is sufficiently close to linearity and the residual returns nearly independent. Thus, if we can identify portfolios that resolve the above mentioned mispricing via their covariances, we can already rule out explanations that cannot be related to factors. For example, *data errors* cannot be picked up by a factor since, being random, they do not co-vary with a market-wide variable. (One exception must be made for data errors caused by stale prices (thin trading): we control for this possible explanation separately.) *Information asymmetries* is less likely to be a factor: there is little obvious variation over time, and even less variation that goes together with market-wide information problems. True, asymmetries are often measured by bid-ask spreads, and these do co-vary across stocks. But spreads are also driven by liquidity, where there is a very clear market-wide factor; so co-variation in spreads is more likely to reflect a liquidity factor than an information factor. *Liquidity*, when instrumented by the bid-ask spread as in Amihud and Mendelson (1986), is more like a characteristic. But liquidity could be modeled as a factor too if it is directly linked to trading volume instead of spread. Variations over time in a company's trading volume are clearly correlated across stocks and low liquidity when all stocks suffer from a thin market is much worse than idiosyncratic episodes of low depth. In this sense, liquidity may be a factor. *Downside risk* instrumented by sensitivity to the changing state of the economy, lastly, corresponds a factor; in Chan *et al.* (1985), the factor is, for instance, correlated to the net business formation. Our evidence indeed is that two additional factor portfolios suffice to resolve the pricing errors in the US. Moreover, these additional factor portfolios also fit the anomalies across developed and emerging markets, that is, outside the US market. It turns out that the required factor portfolios are one additional return spread for size and one for book-to-market. Overall, this paper revives the debate on the influence of size bias in empirical research. Especially, it stimulates further research on the smallest stocks by showing that, given careful screening and filtering, the smallest stocks are too interesting to ban from the research data. The structure of this paper is as follows. Section 1 describes the dataset. In Section 2 we review the FF model (hereafter, abbreviated as FF) and use it as test case to show that some specification decisions, and especially those related to size bias, may have a significant impact on the asset pricing test results. In Section 3, we show that size bias also affects the optimal factor portfolio specifications. More specifically, we show that the standard specifications are not optimal if size bias is minimized, and we re-construct the optimal factor portfolios based on US data. In Section 4, then, we venture beyond the US borders and test the optimal factor specification against various competing models. Section 5 concludes.

## 2. DATASET

We opted for Thomson Reuters Datastream (TRD) because researchers, before us, used TRD for its coverage in terms of number of markets. Examples are Griffin, Ji, and Martin (2003) and Naranjo and Porter (2005) who examine the interaction between country neutral momentum strategies; Griffin (2002) who examines whether country-specific or global versions of Fama and French's three-factor model better explain time-series variation in international stock returns; Kaniel, Li, and Starks (2005) who examine the high-volume return premium across countries; and Bekaert, Harvey, and Lundblad (2006) who use daily returns to construct market-wide liquidity measures in 19 emerging markets. Other researchers seek intra-country coverage instead, and use TRD to compile samples of all stocks traded within a national market. Examples include Clare and Priestley (1998) for Malaysia; Brooks, Faff, and Fry (2001) for Australia; Pinfold, Wilson, and Li (2001) for New Zealand; Hiller and Marshall (2002) for the United Kingdom; and Lau, Lee, and McNish (2002) for Singapore and Malaysia. On the basis of data availability and coverage within and across regions, we select the following countries: North America (Canada, United States), Latin America (Argentina, Brazil, Chile, Colombia, Mexico, Peru), Japan, Asia-ex-Japan (China, Hong Kong, India, Indonesia, Malaysia, Philippines, Singapore, South Korea, Taiwan, Thailand), Euro countries (Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain), non-Euro EU countries (Denmark, Norway, Sweden, UK), Switzerland, Australasia (Australia, New Zealand) and South-Africa. The primary aim of this paper is to assess the impact of size bias in the research dataset on empirical research on stock market anomalies. We therefore use a sample period which is comparable with important studies on market anomalies such as Fama and French (1992, 1993,

1995, 1996a, 1996b, 1998, 2000), Carhart (1997) and Rouwenhorst (1999). Our sample period therefore goes from January 1980 till December 1999. Pre-1980s data was often unavailable or unreliable, especially for the emerging countries. Post-1999 data would include the significant IT-burst not included in the most influential studies on market anomalies. Ince and Porter (2006), however, document important issues of coverage, classification, and data integrity and find that naive use of TRD data can have a large impact on economic inferences. But they also show that after careful screening of the TRD data, inferences drawn from TRD data are similar to those drawn from CRSP. Based on the filters developed using US TRD data, they provide guidelines for screening international TRD data. The screens we apply are similar to the guidelines proposed in Ince and Porter (2006) and we go even further for some issues as summarized below. We extract end-of-month total dollar returns, that are adjusted for stock splits and dividend payments, for common stocks from the TRD Research and Dead lists for each country. We screen for undesired assets and data errors. More specifically we delete dual listings within and across exchanges (e.g. ADR's, GDR's, identical shares), preferred shares, warrants, certificates, shares from the same company but with different voting rights, error shares (e.g. shares with no name, one-day shares), shares that duplicate information on individual companies (e.g. funds, trusts, investment companies, financial holding companies). We next apply screens that eliminate tiny, illiquid and penny stocks. Tiny companies have very little liquidity, can be subject to high price pressure or price manipulation, and often represent too little value to warrant attention. Penny stocks have a larger probability to contain errors. They are often fallen stocks which are highly speculative and illiquid. In practice this means that an end-of-month return of a stock with a market capitalization smaller than \$10,000,000 (tiny stock) or a monthly trading volume smaller than \$100,000 (illiquid stock) or a price smaller than \$1 (penny stock), is eliminated. Whenever trading volume information is not available, we consider an unchanged monthly price (in local currency) as a sign of low trading volume and unreliable price formation for that month and hence both returns based on this price are eliminated. Lastly, we eliminate all returns corresponding to a stock with a negative book-to-market value. After applying these automated screens we manually screen for high-return errors. TRD contains some returns that are simply too good to be true and can be very influential for regression results. The few high-return errors that slipped through the automated filters are: (1) decimal-sign shifting; (2) anomalously low first price of a series (probably theoretical or illiquid); (3) high reported return not corresponding to a similar change in the market capitalization, price or to a huge dividend payout; (4) data reported before actual introduction date or after the actual delisting date; (5) obvious typos; (6) wrongly handled equity offerings. We kept on eliminating these suspect high returns until the first one-hundred highest remaining returns seemed acceptable. This way we minimize the possibility of anomalously blowing up the 'turtle eggs' effect (Knez and Ready, 1997). In the end we created an equity database that offers maximal coverage within and across countries where data errors and size bias are jointly minimized.

### 3. THE IMPACT OF SIZE BIAS ON THE FF MODEL

Our first test design tries to be as close as possible to FF. We then test the robustness of the findings to modified designs. Some modifications are inspired by data availability outside the US, but the main change is the increased room for smaller stocks. We first review the original FF procedure. In FF monthly dollar returns on 25 portfolios of size-and-book-to-market-sorted stocks are regressed on three factor portfolios: the market portfolio, the size factor and the book-to-market factor, i.e.

$$R_i - r_f = \alpha_i + \beta_i(R_m - r_f) + \gamma_i SMB + \delta_i HML + \varepsilon_i. \quad (1)$$

At the end of June of each year, stocks are allocated to either of two groups (small or big, denoted S or B) depending on whether their early-June market cap is below or above the median market equity for NYSE stocks. All stocks are also allocated, via an independent second sort, into one of three book-to-market (B/M) equity groups (low, medium, or high, denoted L, M, or H); the watershed values are the 30th and 70th percentile values of B/M-ranked NYSE stocks. This design implies that FF only use stocks for which both market values and book values are available. They then proceed as follows. For the purpose of constructing the factors, six size-B/M portfolios are then defined as the six intersections of the two size groups and the three B/M groups. These six intersections are labeled S/L, S/M, S/H, B/L, B/M, and B/H. Value-weighted monthly returns on the six portfolios are calculated from July till June next year. For each month, the size factor SMB is computed as the difference between the returns on small stocks (the average of the returns on the three small-stock portfolios, S/L, S/M and S/H) and big stocks (the average returns on the three big-stock portfolios, B/L, B/M and B/H). The book-to-market factor HML is the

difference between, on the one hand, the average of the returns on the two high B/M portfolios (S/H and B/H) and, on the other, the average of the returns on the two low B/M portfolios (S/L and B/L). Note that the returns are value-weighted within each of the six size-B/M portfolios, while for the calculation of SMB and HML, equally weighted averages are taken across the three S/. or B/. portfolios. For the purpose of generating test portfolios (that is, portfolios whose returns need to be explained by the factors), FF form 25 size-B/M portfolios following the same procedure as for the six size-B/M portfolios underlying SMB and HML, except that quintile breakpoints for size and B/M for NYSE stocks are used to allocate all stocks to the portfolios rather than the median or the 30th and 70th percentile values. FF discard negative-B/M firms when calculating the breakpoints or forming size-B/M test portfolios.

**TABLE 1: ALPHA ESTIMATES OF FAMA AND FRENCH (1996A): ORIGINAL**

Size	Book-to-market				
	Low	2	3	4	High
Small	<b>-0.45</b>	<b>-0.16</b>	-0.05	0.04	0.02
2	-0.07	-0.04	0.09	0.07	0.03
3	-0.08	0.04	0.00	0.06	0.07
4	0.14	<b>-0.19</b>	-0.06	0.02	0.06
Big	<b>0.20</b>	-0.04	-0.10	-0.08	-0.14

**TABLE 2: ALPHA ESTIMATES OF FAMA AND FRENCH (1996A): REPLICATION**

Size	Book-to-market				
	Low	2	3	4	High
Small	-0.02	-0.25	0.14	0.18	<b>0.26</b>
2	<b>-0.47</b>	-0.08	<b>0.30</b>	0.14	0.06
3	<b>-0.33</b>	0.02	-0.06	0.02	0.02
4	-0.09	-0.01	-0.10	-0.07	0.00
Big	<b>0.19</b>	-0.01	0.03	-0.07	<b>-0.39</b>

**TABLE 3: BROADENED FACTOR PORTFOLIOS, BREAKPOINTS (ALL) AND TEST PORTFOLIOS**

Size	Book-to-market				
	Low	2	3	4	High
Small	<b>0.40</b>	<b>0.42</b>	<b>0.38</b>	-0.03	<b>0.62</b>
2	-0.47	<b>-0.40</b>	<b>-0.55</b>	<b>-0.62</b>	<b>-0.48</b>
3	-0.32	-0.15	<b>-0.51</b>	<b>-0.37</b>	-0.15
4	0.20	-0.17	-0.32	-0.23	-0.27
Big	0.30	<b>-0.25</b>	<b>-0.41</b>	<b>-0.47</b>	0.03

For the reader's convenience, Table 1 reproduces the alphas obtained in the original Fama and French (1996a) study. To set the stage, we apply the above FF specifications on our TRD database where size bias is minimized (Table 2). The overpricing (or return shortfall) that, in Fama and French (1996a), occurred for the small, growth stocks seems to have shifted up one class, into the second size quintile. In addition, the return anomalies for the book-to-market stocks (the rightmost column) have become more pronounced, both algebraically and statistically. There may also be evidence of what looks like interactions: the extreme size/book-to-market combinations show most mispricing, with the corner cases on the main diagonal being overpriced and those on the secondary diagonal underpriced. Still, the differences are not massive, but the size bias already sets in. Table 3 is the result of a test of the FF model that uses a different design. Table 4 is the roadmap that lists the differences in design and traces changes between Table 2 and Table 3. The choices *re* the research period, the risk-free rate and the market return have only a minor impact on the number of significant alphas. The first major source of differences is monthly rebalancing. Switching from annually updated test- and/or factor portfolios to monthly updated variants boosts the significant alphas both in numbers and values. As there is no obvious explanation why this should be so, except that frequent rebalancing may increase power, we keep on using monthly updated portfolios in the tests below. We treat it as an anomaly or at least an issue of robustness that should be resolved. The most important source of differences between Table 2 and Table 3, however, is the weight given to small stocks. The original FF procedure gives relatively little room to



small firms in three respects: (i) It discards stocks for which either book values or market values are missing, a restriction that tends to eliminate mostly small companies. (ii) The assignment of stocks to factor portfolios or test portfolios is based on NYSE percentile values even though the database also includes Amex and NASDAQ stocks. This results in size groups with more firms in the smaller categories and in book-to-market groups with more stocks in the growth or low book-to-market category. (iii) Value-weighting: while the portfolio-theory logic underlying the CAPM dictates value weights as far as the market portfolio is concerned, there is no such theoretical basis for the size and book-to-market factors. One effect of value weighting is that the FF S(mall) portfolio, even though it contains all below-median stocks, is dominated by the comparatively larger ones, those close to the median size. Since, in addition, the median is the NYSE one, the value-weighted S(mall) portfolio may be more of a mid-cap portfolio. While there is, of course, nothing a priori wrong with all this, a robustness check seems useful. For these reasons we use (a) “broad-based” portfolios and breakpoints (based on all stocks) instead of “narrowed” portfolios and breakpoints from stocks that have both book values and market values; (b) breakpoints based on all stocks instead of NYSE stocks only and; (c) equally-weighted portfolios for factors other than the market. We do this broadening on left-hand side (the test portfolios) and on the right-hand side (the factor portfolios).

**TABLE 4: SUMMARY OF TEST DESIGN VARIATIONS**

	<b>Test Design Variations</b>	<b>number of alphas</b>	<b>avg alpha</b>	<b>avg abs alpha</b>
1a	Starting point (Table 2): FF (1996a) replication	6	-0.02	0.13
1b	Time period's alternative: 1976-1993 to 1994-1999	7	-0.17	0.31
1c	Time period's alternative: 1976-1993 to 1980-1999	6	-0.07	0.17
2	$R_m$ & $R_f$ : CRSP to TDS & T-bill to discount rate	5	-0.09	0.18
3a	Update frequency <i>test</i> portfolios: monthly	13	-0.02	0.30
3b	Update frequency <i>factor</i> portfolios: monthly	13	-0.19	0.23
3c	Update frequency <i>test- &amp; factor</i> portfolios: monthly	14	-0.19	0.27
4a	Weighting scheme <i>test</i> portfolios: value to equal	14	-0.17	0.28
4b	Weighting scheme <i>factor</i> portfolios: value to equal	15	-0.31	0.35
4c	Weighting scheme <i>test- &amp; factor</i> portfolios: equally	16	-0.29	0.34
5	Broadened <i>factor</i> portfolios	9	-0.10	0.24
6	Broadened <i>breakpoints</i> (NYSE)	7	-0.05	0.25
7	Broadened <i>test</i> portfolios	14	-0.23	0.29
8	Broadened <i>breakpoints</i> (all)	13	-0.15	0.34
9	Ending point (Table 3): White's errors	11	-0.15	0.34

We find, in Table 4, that the broadened factor portfolios and breakpoints are more capable of pricing unmanaged size-book-to-market portfolios: the number of rejections drops, from 16 to 7. However, the use of broadened test portfolios worsens the fit again as the number of significant alphas rises from 7 to 14. This suggests that broadened test portfolios are more powerful in the sense of providing more rejections. For these reasons we continue to apply broadened factor and test portfolios in the following tests. The large number of significant abnormal returns is not the only anomalous result in Table 3. In addition, the typical rejected alpha is large: about 0.5% per month or more. Lastly, there are systematic patterns in the alphas. First, within each and every row there is a U shape in the alphas. Second, within each column there is a J shape, with the small-firm quintile always providing a strongly positive abnormal returns, the second quintile a strongly negative one, followed by gradually improving returns for higher-size quintiles. To summarize, the FF factor portfolio specifications are arbitrary, following from the empirical evidence in Fama and French (1992), and no alternatives have been searched for, hoping that the test results are not sensitive to these specification choices (Fama and French, 1993, p.9). However, we show that some specification decisions, and especially those related to size bias, may have a significant impact on the asset pricing tests. In the next section we show that size bias also affects the optimal factor portfolio specifications.

## 4. THE IMPACT OF SIZE BIAS ON THE OPTIMAL FACTOR SPECIFICATION: US EVIDENCE

In view of the momentum-related anomalies that came to light after the publication of FF, a momentum factor is added to the model, following the Rouwenhorst (1999) version of Jegadeesh and Titman (1993). In this section we construct and test an optimal model that takes care of most of the anomalies we just noted, without having to bring in new non-return data like bid-ask spreads. The section is organized as follows. We start, in Section 4.1, with a look at mean returns on decile portfolios, one set per risk dimension. Even though the sorting is one-dimensional and the returns are not risk-adjusted, we find back the U's and J's we observed in the alphas of the previous section. A closer scrutiny of one-dimensional decile portfolios provides ideas on how to define the optimal factors (Section 4.2). In Section 4.3, the resulting 6-factor model in its full version is then tested. The obvious risk, in this approach, is that we might be over-fitting a specific dataset; however, bear in mind that the resulting model is also tested on international data (Section 5), where it appears to hold well, too.

### 4.1 One-Dimensionally Sorted Portfolios: the Role of Size Revisited

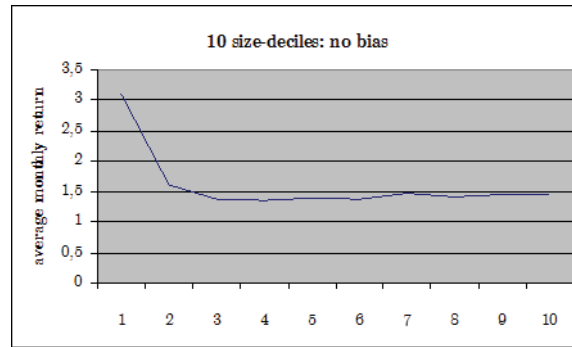
In this section we look at returns from decile portfolios of stocks sorted along one dimension at the time. Figures 6 to 8 show average returns for ten decile portfolios sorted by size, book-to-market (B/M) and momentum, respectively. For further reference we make a comment for each type of stratification. First, the main size effect is found in the first and to some extent also in the second decile, which provides higher average returns. In deciles 3-10, in contrast, there is a weak premium for larger sizes. This last observation is in line with Fama and French (1992), who find evidence that the size premium in the US has become weaker in the eighties, and with Eun, Huang and Lai (2003) who likewise find that, the mean return is somewhat higher for large-cap funds than for small-cap funds in the US market. Second, we note a book-to-market effect is more monotone positive, but S-shaped rather than linear. There is a mild return-shortfall effect in deciles 1 and 2 (growth firms earning moderately lower returns), which then flattens out; and as of decile 7, "value" firms earn increasingly higher premia. Third, an S-pattern is also present in the momentum factor, with strong losers going on earning clearly lower returns, strong winners continuing their upward trend, and mid-rate companies (deciles 4-8) earning flat returns. Common to the three schedules is the nonlinearity. These patterns raise the possibility that the tradition of capturing the size effect (or book-to-market or momentum effect) by just one factor, the difference between a "hi" and a "lo" portfolio return, may be too simplistic. True, this inference is indicative only. For one thing, in theory the stocks' sensitivities to the factors could be sufficiently nonlinear in the quantile's order  $i$  to pick up the apparent nonlinearity. Second, the sort is one-dimensional; in theory the omitted other risk factors could still be responsible for what here seems to be a nonlinearity. Still, recall that we obtained very similar conclusions from the alphas in the previous section (Table 3), where exposures to factors were used rather than quantile membership and where two dimensions of non-market risk were considered simultaneously. In the next subsection we identify new factor portfolios that get the alphas of unmanaged funds closer to zero.

### 4.2 In Search of Optimal Factor Portfolios

The conjecture behind the rest of this paper is that the apparent mispricing in Section 3 may be resolved by using, for size and book to market, two return differentials rather than one. We compare the performance of this optimal model, with its six factors, to competing models. In Section 4 we then test the approach largely out-of-sample, namely on international data. *A second size factor.* The average monthly dollar returns of the size deciles for the period 1980-1999 were already shown in Figure 1, which revealed a large average return for the first-decile (smallest) stocks and a slightly higher average return for the largest stocks compared to the middle deciles. In search of a portfolio proxy for the unidentified size-related factor(s), we hypothesize two kinds of size risk: (a) the regular size factor like in FF which holds for all stocks but the smallest; and (b) the risk inherent to the smallest stocks that cannot be accounted for by neither beta risk nor the regular FF size risk. Since FF already coined the label *small* for their not-so-small stock portfolio, we chose the label *micro stocks* for our new factor, even though by many countries' standards these micro stocks are still quite sizable. We get the best results for purely size-sorted deciles with a micro-stock risk factor (*mSMB*) defined as the return on a zero-investment portfolio that is long the first decile and short deciles 2 to 10, and a regular size risk factor (*rSMB*), defined as a zero-investment portfolio that is long in stocks from deciles 2 and 3 and short stocks from deciles 6 to 9.

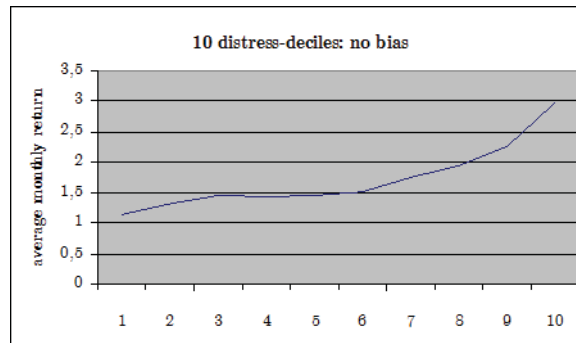


**FIGURE 1: SIZE DECILES: US DATA**



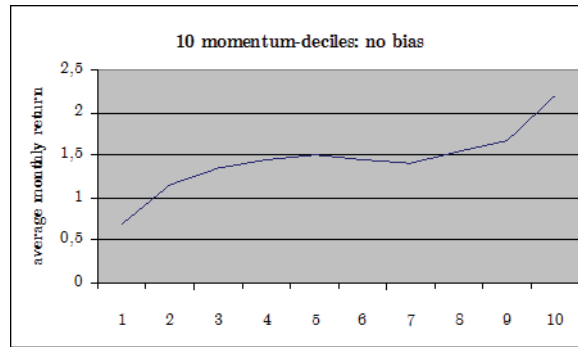
A second book-to-market factor. The average monthly dollar returns for the book-to-market-decile portfolios for the period 1980-1999 were already shown in Figure 2. Recall that we saw a monotone positive but S-shaped schedule where the highest-book-to-market decile really sticks out. In search of a portfolio proxy for the unidentified book-to-market-related factor(s), we hypothesize two kinds of book-to-market risk: (i) extreme book-to-market risk, i.e. the risk inherent to the highest B/M stocks that cannot be accounted for by beta risk nor normal book-to-market risk; (ii) normal book-to-market risk in the spirit of FF but redefined to reduce overlap with extreme book-to-market risk. We get the best results for purely book-to-market-sorted deciles with an *eHML* factor reflecting extreme book-to-market risk defined as the return on a zero-investment portfolio that is long the highest B/M-decile stocks and short all other B/M deciles; and a *rHML* risk factor reflecting the regular book-to-market risk, measured as the return on a zero-investment portfolio that is long the value stocks in B/M deciles 8 to 10 and short the growth stocks B/M deciles 1 and 2.

**FIGURE 2: B/M DECILES: US DATA**



A modified momentum factor. The average monthly dollar returns of the momentum deciles for the period 1980-1999 were already shown in Figure 3. We described the plot as a mildly S-shaped rise. The apparent nonlinearity may still be picked up by the difference between decile membership and exposure, or by beta or other risks. When we combine the standard momentum portfolio with the standard size and book-to-market portfolio, i.e. the standard 4-factor model, two portfolios are still mispriced (Table 5, to be discussed below). It turns out that no second momentum portfolio is needed to mend this. We get the best results by redefine WML as the difference between returns from the 10% winners and the 20% losers.

FIGURE 3: MOM DECILES: US DATA



#### 4.3 Tests of the Modified Factor Specifications

In this section we combine the optimal size-, book-to-market- and momentum risk factors, as defined in the previous section, into one 6-factor model:

$$R_i - r_f = \alpha_i + \beta_i(R_m - r_f) + \gamma_i mSMB + \delta_i rSMB + \phi_i eHML + \varphi_i rHML + \theta_i WML + \varepsilon_i, \quad (2)$$

The competing model is the standard 4-factor model with factor portfolios like in Fama and French (1993, 1995, 1996a, 1996b), Carhart (1997), Jegadeesh and Titman (1993) and Rouwenhorst (1999),

$$R_i - r_f = \alpha_i + \beta_i(R_m - r_f) + \gamma_i SMB + \delta_i HML + \phi_i WML + \varepsilon_i, \quad (3)$$

where SMB (small minus big) is the size factor portfolio, viz. a zero-investment portfolio that is long the 50% smallest stocks and short the 50% largest stocks; HML (high minus low) is the book-to-market factor portfolio, a zero-investment portfolio that is long the 30% highest B/M stocks and short the 30% lowest B/M stocks; and WML (winner minus loser) is the momentum factor portfolio, a zero-investment portfolio that is long the 30% top past performers (winners) and short the 30% lowest past performers (losers). All portfolios are equally weighted and updated monthly. To give the standard 4-factor model every chance it deserves, we test this model in four different implementations. The first is the one we just described below Equation 3. The three variants are the following: We showed in Section 3 that switching from annually updated factor portfolios to monthly updated factor portfolio (SMB and HML in Table 4) generated more significant alphas (13 against 5). For this reason we also test the standard model with factor portfolios that are updated annually instead of monthly. It might be the case that the beta coefficient of small stocks is underestimated because of thin trading associated with small stocks. Thin trading introduces a bias towards zero in the contemporaneous covariance of small stocks with the market return. We can substantially mitigate this problem by including the two leads and lags of the market return as additional factors. This way we enlarge the market return window with which small stocks can covary as in Dimson (1979). Lastly, we apply the standard 4-factor model that uses the original risk factors (SMB and HML) computed by French and, updated to December 1999.

TABLE 5: SIGNIFICANT ALPHAS AND P-VALUES: ONE-DIMENSIONAL TEST PORTFOLIOS

Test portfolios	4-factor model	annual update	leads/lags $R_m$	FF's factors	6-factor model
Size	1 (0.00)	1 (0.00)	2 (0.00)	2 (0.00)	0 (0.88)
Book/market	3 (0.00)	3 (0.00)	3 (0.00)	5 (0.00)	0 (0.30)
Momentum	2 (0.00)	0 (0.00)	2 (0.00)	6 (0.00)	0 (0.37)

In Table 5, the standard 4-factor model with monthly or annually updated factor portfolios (SMB and HML) produces six or four alphas significantly different from zero and Wald's tests always reject the null hypothesis of zero alphas. The significant alphas are clearly not resolved by adding two leads and lags of the market risk factor or by using the original Fama and French risk factors. We therefore conclude that neither the underestimated-beta argument nor the original Fama and French risk factors are able to make the standard 4-factor model fit the TDS sample. The 6-factor model is able to cope with this much better. In Table 5, the estimated alphas of the 6-factor model are always insignificantly different from zero and Wald's test cannot reject the null hypothesis of zero alphas.

**TABLE 6: SIGNIFICANT ALPHAS AND  $\chi^2$ -VALUES: TWO-DIMENSIONAL TEST PORTFOLIOS**

Test portfolios	4-factor model	6-factor model
Size & B/M	7 (173.12)	1 (53.70)
Size & Momentum	4 (160.68)	1 (42.75)
Momentum & B/M	4 (106.26)	0 (54.53)
Size & B/M: separate data	5 (130.76)	1 (57.02)

From Table 6 (two-dimensional test portfolios), we see that for each of the three two-dimensional (5x5) test portfolios the generalized 6-factor model generates far fewer significant alphas, and lower  $\chi^2$  statistics, than the standard 4-factor model. We, therefore, conclude that, within this TRD sample, the 6-factor model, with its additional size and book-to-market risk factors, is better able to price unmanaged one- and two-dimensional size-, book-to-market- or momentum sorted portfolios across the entire size spectrum. Fama and French (1995) point out that spurious common variation might be induced when the regressor portfolios SMB and HML are constructed from the same stocks as the regressand test portfolios. To avoid this potential bias, they run a test where the stocks in the left-hand-side portfolios are different from those on the right-hand side. Specifically, they split the data into two equal groups. One group provides the dependent value-weighted size-B/M test portfolios for the time-series regressions. The other is used to form explanatory factor portfolio returns. We proceed similarly. Stocks are ranked alphabetically; the odd-numbered are used to calculate the left-side test portfolios, from the even-numbered stocks we calculate the right-side risk factors. This procedure produces reassuringly similar alpha estimates and  $t$ -statistics. Thus, spurious correlation does not seem to have been behind our earlier results.

#### 4.4 Summary

Let us summarize the results of this section. In this TRD sample, where size bias is minimized, the roughly ten percent smallest stocks are mispriced by the standard models. These pricing errors are resolved by adding two additional zero-investment portfolios (one size and one book-to-market factor) to the standard 4-factor model, resulting in a 6-factor model. One interpretation is that there are economic risks associated with the smallest stocks—not captured by the standard models—that are priced by a 6-factor model. However the question remains: what is the economic interpretation of these risk premia for the smallest stocks? Data errors are random and do not covary with a market-wide variable. Information asymmetries are more like a characteristic as there is little obvious variation over time and even less covariation with market-wide informational problems. Therefore, neither data errors nor information asymmetries can be mimicked by a factor, which excludes them as possible economic explanations of the risk premia for the smallest stocks. The economic explanations we do put forward for these risk premia are liquidity risk and downside risk. The additional risk factors could be mimicking the liquidity risk associated with the smallest stocks if that liquidity risk is directly linked to trading volume. After all, a company's trading volume varies over time, and trading volume variations are correlated across stocks. The second possible economic explanation is size-related downside risk. According to Chan *et al.*, small stocks are more exposed to the changing state of the economy and suffer more from negative business shocks. As the state of the economy clearly varies over time and is correlated across stocks, the additional risk factors could also be capturing this downside risk associated with the smallest stocks.

### 5. INTERNATIONAL EVIDENCE

Recall that FF calculated the size- and book-to-market-decile breakpoints on the NYSE stocks only, and used these to catalogue all US stocks, including Amex and NASDAQ stocks. This procedure is difficult to implement in an international setting. When Fama and French (1998) investigate value versus growth effects in an international setting, they abandon this procedure and calculate the decile breakpoints from all stocks. They proceed by calculating their size and book-to-market factor portfolios (SMB and HML) for each country separately. The global factor portfolios are then constructed as averages of these national factor portfolios, weighted according to the MSCI country weights. This surely avoids the risk that, say, the Big portfolio becomes very much a US affair. However, in some countries the range of corporate size or B/M is quite narrow: many small Western countries have no really big firms, and some emerging markets specialize in one sector, thus reflecting the rather similar size or book-to-market figures that are typical for that sector. In short, one issue is whether classification into, say, the Big or Small buckets should be done country by country or via one global list. Another issue again is value weighting. In Fama and French

(1998) this happens within countries and across countries, via the MSCI weights. The combined effect again is to give relatively little room to small firms, even less than within the US study: many small firms are classified as locally Big rather than globally Small and then put in the value-weighted global Big portfolio where their impact is minimal. A related consequence of value weighting is that both S and B are now dominated by US firms, making the international sample rather similar to the American one. Lastly, in Fama and French (1998) there is a requirement that book data is known, and this eliminates mostly smaller stocks. We therefore construct the size, book-to-market and momentum factor portfolios in one shot, from the global stock list; we use equally weighted portfolio returns for all factors other than the world market; and whenever possible we include also stocks with an unknown book-to-market value.

## 5.1 Methodology

In this paragraph, we investigate whether the optimal specification of the factor portfolios from the US setting (previous section), also applies in an international setting. To do so, we test five competing models: The first model is the basic one-factor CAPM,

$$R_i - r_f^{US} = \alpha_i + \beta_i (R_m - r_f^{US}) + \varepsilon_i. \quad (4)$$

CAPM 2 is the standard 4-factor model:

$$R_i - r_f^{US} = \alpha_i + \beta_i (R_m - r_f^{US}) + \gamma_i SMB + \delta_i HML + \phi_i WML + \varepsilon_i. \quad (5)$$

where the factor portfolios are set up following Fama and French (1993, 1995, 1996a, 1996b), Carhart (1997), Jegadeesh and Titman (1993) and Rouwenhorst (1999) except that portfolios are equally weighted and updated monthly. CAPM 3 is the 6-factor CAPM obtained by adding to (5) the two factors identified in the US tests (the micro-stock and extreme-book-to-market factors, but extracted from the global database) and re-specifying the SMB, HML and WML factors as described in Section 4.2:

$$R_i - r_f^{US} = \alpha_i + \beta_i (R_m - r_f^{US}) + \gamma_i mSMB + \delta_i rSMB + \phi_i eHML + \phi_i rHML + \theta_i WML + \varepsilon_i. \quad (6)$$

The next CAPMs are international ones. The model in Sercu (1980), a static international CAPM that generalizes Solnik (1974), features the world market-portfolio return and the excess returns from investing in each non-USD currency. It has no state variables, so an obvious extension will be to add the standard SMB, HML and Momentum factors. Including all 39 currencies as factors is not recommendable as the power of the alpha tests will drop dramatically, but apart from this consideration there are no clear guidelines or standard practices. Jorion (1990) proposes to use a single trade-weighted basket of currencies, but this assumes that all stocks have a vector of currency exposures that is proportional to the trade weights, a restriction which Rees and Unni (1999) reject empirically. We adopt a compromise. Specifically, we include in every regression the individual currencies of seven countries (C7), taking at least one currency per continent and looking, per continent, at economic weight and number of stocks in our database. This "C7" list contains the Canadian Dollar, British Pound and Deutsche Mark, Japanese Yen and Korean Won, Australian Dollar and South African Rand. All stocks are allowed to be exposed, without any prior restrictions, to each of these C7 currencies. On top of that, non-C7 stocks are assumed to have a common exposure to their own exchange rate (Adler and Simon, 1986). Since the regressand variables are portfolio returns, this last assumption means that for each such test portfolio a basket of currency deposits is created which gives to each non-C7 currency the same weight as the stocks from that country have in the particular test portfolio. Thus, if a portfolio contains  $n_1$  stocks from non-C7 currency 1 and  $n_2$  stocks from non-C7 currency 2, then the basket consists of fractions  $n_1/(n_1+n_2)$  invested in currency 1 and  $n_2/(n_1+n_2)$  invested in currency 2. The resulting international version of the 4-factor model reads like

$$R_i - r_f^{US} = \alpha_i + \beta_i (R_m - r_f^{US}) + \gamma_i SMB + \delta_i HML + \phi_i WML + \sum_{k=1}^7 \psi_{i,k} XF_k + \zeta_i C XF_i + \varepsilon_i, \quad (7)$$

$$\text{where } XF_k = s_k + r_f^* - r_{f,t}^{US}, \quad (8)$$

where the right-side factor portfolios (SMB, HML and WML) are like in the standard model. Subscript  $i$  stands for the  $i$ -th left-side test portfolio, subscript  $k$  denotes the  $k$ -th exchange factor portfolio and  $C XF_i$  refers to the compound non-C7 exchange factor portfolio tailored for the  $i$ -th test portfolio.  $s_k$  denotes the one-month  $k$ -currency return (USD per foreign currency) and  $r_{f,t}^*$  the foreign risk-free interest rate. We further refer to this model as the international 4-factor model. The last CAPM candidate is obtained by adding to (7) the two factors identified in the US tests (international versions of the micro-stock and extreme-book-to-market factors) and re-specifying the SMB, HML and WML factors as described in Section 4.2. The resulting international version of the 6-factor model reads like:

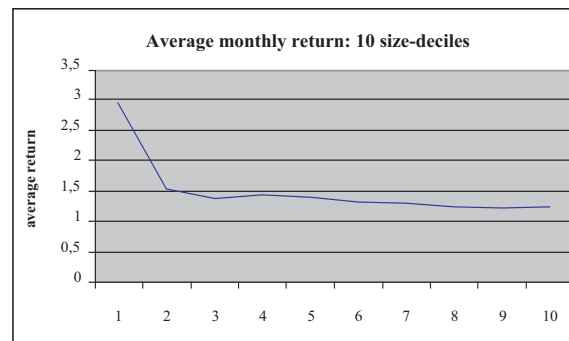
$$R_i - r_f^{US} = \alpha_i + \beta_i (R_m - r_f^{US}) + \gamma_i mSMB + \delta_i rSMB + \phi_i eHML + \varphi_i rHML + \theta_i WML + \sum_{k=1}^7 \psi_{i,k} XF_k + \zeta_i C XF_i + \varepsilon_i. (9)$$

An equivalent interpretation is that this model adds exchange risk factors to the 6-factor model. We further refer to this model as the international 6-factor model. These models are tested against the following test portfolios: (i) ten size deciles; (ii) ten book-to-market deciles; (iii) ten momentum deciles; (iv) 25 size-book-to-market portfolios; (v) 25 size-momentum portfolios; and (vi) 25 momentum-book-to-market portfolios. One potential problem is that US firms take up 55% of the total number of observations; even in the lower size quintile they still provide 45% of the observations. This relative large impact of US shares in the international database may jeopardize the international evidence of the optimal risk factor composition. To mitigate this potential bias, we compute non-US test portfolios by deleting the US stocks from the one- and two-dimensional test portfolios, preserving the allocation of non-US stocks along the test portfolios, i.e. (vii) ten ex-US size deciles; (viii) ten non-US book-to-market deciles; (ix) ten non-US momentum deciles; (x) 25 non-US size-book-to-market portfolios; (xi) 25 non-US size-momentum portfolios and (xii) 25 non-US momentum-book-to-market portfolios.

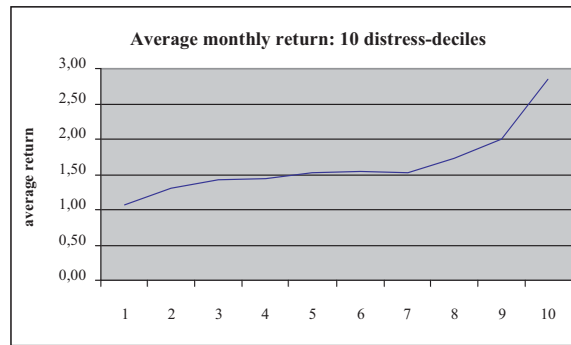
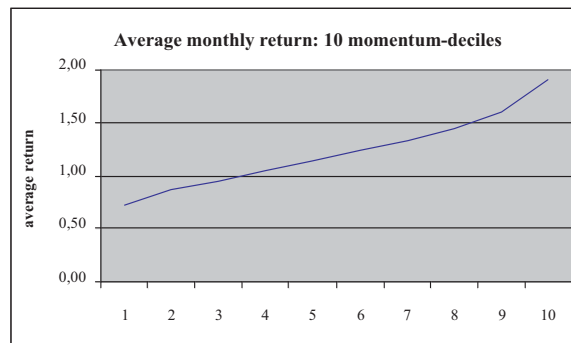
## 5.2 Empirical Results

When we look at the plot, in Figure 4, of the average monthly dollar return of the ten international size-deciles for the period 1980-1999, it looks a lot like Figure 1 (US market). Thus, also in an international setting there seems to exist a strong small-firm effect for the smallest stocks—unless, of course, the high average return would be explained by beta. In contrast, the inverted small-firm effect in the US market, where the average return of the biggest firms was slightly higher than the average-sized firms, disappears in an international setting: bigger firms earn monotonely less.

**FIGURE 4: SIZE DECILES: INT. DATA**



We now turn to Figure 5 which plots the average monthly dollar return for ten international B/M decile portfolios for the period 1980-1999. Again Figure 5 resembles its US counterpart, Figure 2, which exhibits a gradually rising monthly average return as we move from growth stocks (low B/M value) to book-to-market or value stocks (high B/M value). There is an S-shape, and the highest book-to-market decile sticks out again. Lastly, Figure 6 plots the average monthly dollar return for ten international momentum decile portfolios for the period 1980-1999. Remember that Figure 3 (US market) looked like an S-shaped positive schedule not too far from linearity. Figure 6 resembles a linear rise even more. Apparently, in an international setting, the average return of international momentum portfolios rises at a more constant rate.

**FIGURE 5: B/M DECILES: INT. DATA****FIGURE 6: MOM DECILES: INT. DATA**

From Table 7, we see that also in an international setting the specification of the factor portfolios plays an important role in the ability of an asset pricing model to price unmanaged portfolios. The number of significant alphas and the corresponding  $\chi^2$  statistics ( $H_0$ : all  $\alpha$ 's equal to zero) vary widely across the models. However, across all twelve test portfolio stratifications we see, in Table 7, that the (international) 6-factor models produce always fewer significant alphas, than the standard models, and lower  $\chi^2$  statistics if the number of significant alphas is equal to those of the standard models. In short, on the basis of their ability to price unmanaged international portfolios, we would rank the models as follows: (1) the 6-factor models; (2) the standard 4-factor models; and (3) the basic 1-factor model. As before, the fact that a factor solves the mispricing indicates that the smallest stock returns do not stem from data errors or information asymmetries, leaving liquidity and downside risk as the more likely explanations.

**TABLE 7: SIGNIFICANT ALPHAS AND  $\chi^2$ -VALUES: INTERNATIONAL PORTFOLIOS**

Test portfolios	1-factor	4-factor	6-factor	Int.4-factor	Int.6-factor
Size	1 (423)	3 (324)	0 (16.23)	4 (311)	0 (13.81)
B/M	4 (61.60)	3 (37.33)	1 (18.51)	3 (52.91)	1 (19.31)
Momentum	4 (29.10)	2 (32.30)	0 (39.36)	2 (25.22)	0 (29.23)
Size & B/M	11 (228)	7 (177)	0 (35.99)	5 (166)	0 (35.62)
Size & Momentum	11 (142)	8 (224)	2 (112)	9 (208)	2 (94.49)
Momentum & B/M	13 (145)	8 (83.72)	1 (48.30)	8 (76.26)	0 (29.92)
Non-US Size	4 (201)	1 (137)	0 (52.53)	1 (142)	2 (54.80)
Non-US B/M	2 (43.01)	2 (47.89)	0 (18.67)	3 (52.39)	0 (18.54)
Non-US Momentum	2 (21.24)	0 (18.31)	0 (9.51)	0 (16.39)	0 (7.60)
Non-US Size & B/M	11 (145)	5 (138)	4 (66.65)	4 (111)	5 (58.44)
Non-US Size & Momentum	11 (142)	8 (224)	2 (112)	9 (208)	2 (94.49)
Non-US Momentum & B/M	11(95.41)	1 (69.29)	0 (39.23)	3 (67.92)	0 (35.79)



## 6. CONCLUSION

We setup an international database from Thomson Reuters Datastream. We carefully apply several screens similar to those in Inca and Porter (2006). In the end, we created an equity database that offers maximal coverage within and across countries with minimal data errors and minimal size bias. First, by applying the FF model, we show that some specification decisions, and especially size bias, may have a significant impact on the asset pricing test results. Second, we show that size bias also affects the optimal factor portfolio specifications. By looking at the graphs and applying the standard models to different test portfolios stratifications, we encounter pricing errors especially related to the ten percent smallest stocks. Further investigation reveals that two additional risk factors (i.e. one micro-stock factor and one extreme book-to-market factor) can solve the mispricing both on US data and on international data (with 39 countries both developed and emerging). However, the question remains: what is the economic interpretation of these additional risk factors? As the mispricing of the smallest stocks can be resolved by factors rather than characteristics, data errors and information asymmetries are excluded as possible economic explanations. After all, data errors are random and do not covary with a market-wide variable and information asymmetries are more of a characteristic as there is little variation over time and even less covariation with market-wide informational problems. Liquidity risk and downside risk, however, remain serious candidates as economic interpretation of the additional risk factors. If liquidity is linked to trading volume it can be mimicked by a factor, because a company's trading volume varies over time and trading volume variations are correlated across stocks. Also downside risk can be mimicked by a factor; so it could offer an economic interpretation of the additional risk associated with the smallest stocks. According to Chan *et al.*, small stocks are more exposed to the changing state of the economy and suffer more from negative business shocks; and the state of the economy clearly varies over time and is correlated across stocks. Further research is needed to measure the separate relevance of both possible economic interpretations and to identify more economic explanations for the additional risks associated with the smallest stocks.

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# THEORETICAL MODEL AND A RESEARCH AGENDA FOR INTEGRATING THE CONSUMER IN NETWORK'S RESEARCH

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## ABSTRACT

*The aim is to present a theoretical model and a research's agenda about the inclusion of the consumer in the reasoning and researches about networks, having as basis the concepts of social network. The proposition was born from the analysis of 82 theoretical articles and network cases from some countries, of which the objectives included the consumer. This analysis has shown that the consumer is absent as an actor, be it theoretically or in practical propositions. He has no recognized social role in the networks and there are no studies about the management of his participation. From this data it was analyzed the causes of this absence, mainly the use of theories of the individual, inadequate in a network reasoning and a theoretical model that includes the consumer as an actor of the network is proposed; creating a new field of reflection, as well as the emergence of research themes until now inexistent. At this point, its possible develops a new management practice in consumer's services and reverse logistic.*

**Keywords:** networks, social networks, consumers

## 1. INTRODUCTION

The aim of this work is to present a model that includes the consumer in the theory and management of networks from the analysis of a significant amount of articles about the concepts and cases of networks that intended to include consumers, but did not fulfill the task. The subject is relevant seeing as the concepts of networks are facing more acceptances towards the scientific community and there is a gap between the affirmatives on the consumer's importance in the network and his actual place in them. Articles such as Tichy, Tushman and Fombrun (1979); Dwyer, Schurr and Oh (1987); Castells (1999); Pereira e Luce (2002) and Giglio and Kwasnicka (2005) have highlighted the importance of developing of work and research towards the concepts of networks, having as a central piece the relationship with consumers.

On the first part, results of the analysis of articles and conclusions about the reasons of the absence of consumers are presented. On the second part there is the presentation of theoretical model that makes possible the inclusion of consumers and brings forth a new field of research.

## 2. LITERATURE REVIEW

According to Miles and Snow (1992) the organized birth of networks is noticeable from 1980, in a reality bearing many changes and uncertainty. Among the reasons for this situation are the fast technological development and changes in consumer's behavior and values. With the emergence of interdependence and trust, partnerships between buyers and sellers appear, as well as organization networks, which aim to establish long-term relationships. Companies, consumers, suppliers and competitors associate for the development of new technologies, new products and new markets, with upsides to all.

Concerning consumers, it can be highlighted their continuous demand for innovation and quality; access to information; the growing importance in their relation to various meeting points in the supply chain, which implies in cooperated tasks; the companies' tendency for customizing products, from consumers' demands, which implies in joint efforts; the change in companies' focus from financial resources and products to the creation of value to the consumer, which demands the participation of various companies. These new values and roles of the consumers constitute the starting point for the development of what has been called strategy of market orientation (DAY, 1994).

Considering these items, one realizes the importance of the consumer as causal agent and participant on the formation and routines of networks, which creates the expectation that the articles about networks consider their presence and participation. The tendency in texts, however, is analyzing competitive factors of networks, taking into consideration companies alone. Anderson, Hakansson and Johanson (1994), for instance, put the term *joint value in partnership* to indicate a new form of join value; that is not born from a single company, but from the strength of a particular group of companies inside a business. Pereira (2002)

says that in Marketing reasoning, themes like power, authority and conflict would be more important than profit, return and market position. These authors, however, do not discuss that the words *value*, *power* and *conflict* are more meaningful with the participation of the relationships with consumers.

We have noticed evidence of a gap between the claim of the consumer's importance and their real presence in the articles and suggested actions, either in studies of networks causalities, or in network management. That way, it has been tried to base the perception of the gap and, in positive case, propose a model that included the consumer.

### 3. METHODOLOGY

To investigate the possible absence of the consumer in texts about networks a search was carried for articles containing the union of both key-words, that is, consumers and networks. It therefore constitutes a bibliographical research; qualitative, descriptive and propositional. It has been utilized the databanks from PROQUEST – ProQuest Information and Learning and EBSCO – Ebsco Information Service. After having selected the articles, a second filtering was made, which included the content analysis of the abstracts and the objectives. A third filtering consisted in taking into account only articles filling these requisites:

1. Are from classified scientific magazines.
2. Authors appear in other references.
3. The article contains at least one item concerning the consumer in the networks.
4. Even though it is a case study, the title, or the abstract refers to the theme of relationship with the consumers.

Those way 82 texts were selected. For each text it was used the content analysis, as defined by Bardin (2004), specially the technique of theme analysis. According to Bardin, the theme analysis aims to create a picture of the convergences and amplitude about the theme, as well as finding and explaining the emerging categories.

### 4. ANALYSIS OF RESULTS

The articles date from 1976, with the original work of Burt (1976), through the 80's, with classic texts such as Thorelli (1986), Miles and Snow (1986, 1992) and coming to 2012.

As the first step in the analysis, the predominant categories about network concepts were raised. Despite vast amplitude, with concepts that cover clusters, productive chains, *joint-ventures*, strategic alliances, partnerships, networks and social networks; there is an understanding about the concept of dyadic. Networks are understood to be a group of dyadic connecting actors, as defined by Ebers and Jarillo (1997). The structure of a dyadic comprises three aspects: the actors, the relationships and the activities. About the actors, the predominant approach is to consider a company as a unit for study. The activities refer to daily tasks, or specialized ones, that characterize the networks, such as information exchange. About the relationships the predominant studies are the ones that analyze the competitive advantages of the participant companies when they relate and cooperate. There are few references to dyadic with the consumers, concentrated on texts dealing with services (CRAVENS and PIERCY, 1994; BERTON, HULBERT and PITT, 1999). O'Farrel and Wood (1999) affirm the importance of analyzing consumers, but realize there is a gap in literature, especially in situations in which the consumer himself demands the formation of an alliance.

Aside from the dyadic, two other categories appear frequently on texts: cooperation and interdependence. The content analysis has shown that both are classified as subcategories of relationships, which is one of the parts of the dyadic.

There are, therefore, three big convergences about categories in the analyzed texts: the networks are groups of dyadic and are characterized by the existence of cooperation and interdependence in the relationships between the actors. The word *relationship* is the big convergence theme, being present in the three key-words of the analysis: dyadic, cooperation and interdependence. The networks are structured by the relationships. The consumers are always mentioned, but are placed on the last link in the chain, receiving the full value and doing only the financial exchange. One exception is Harland (1995), which takes into consideration the couple consumer-company/supplier-company.

The relations in the network are understood from the square presented by Castells (2000); built from the relations of production, consuming, experience and power. The flow of information is the central piece in the organization of the social structure and allows forms of connection between the actors that did not

exist before. The word consumption leaves no doubt that the consumers are also present in this structure. The other words (production, experience and power) also validate the presence of the consumers. Even though these starting points are clear on who are the actors, the consumers are absent in all four modes: they neither appear as influence in production (and said influence has been widely researched by Marketing); nor as consumers with specific experiences on the network; nor about their controls and power relationships. Exceptions appear in Souza (2004), which says there is the need for a return of the principles of strategy of value, which puts the consumer as the center of strategic decisions and in Muhanna and Wolf (2002), whose authors says that the explanation of the network is more complete when the consumer is inserted.

About the structure of the network, two dominant paradigms have appeared, as was already pointed out by Oliver and Ebers (1998), in a work similar to the current: the paradigm of the structure of the social network, with social theories of relationships between the actors and the paradigm of the structure of network management (which is, explicitly, a discussion of the structure of power in the network); with theories on a network's functioning, order and controls. In both paradigms the analysis has shown that studies about people, motivation and intentions are little developed, as well as the concept of relationship, sometimes utilizing some classic concepts of Sociology and Psychology, such as social role; and sometimes repeating the concepts from referential articles, such as Castell (1999), that has shown the path of the social network, but did not develop the matters of management.

The consumer is absent from this system, although, theoretically, he is remembered. Some of the rare articles that seek to reflect over this aspect are Ganesan (1994), which seeks to understand the aspects that would lead to a lasting relationship between consumers and sellers and Achrol and Kotler (1999), with the concept of networks of opportunities, which are organized based on the knowledge of consumers' expectations and lifestyles. The latter is one of the rare articles that put the system's objective focused on the consumer.

At this point it is raised the hypothesis that an explanation for the consumer's absence would be found in the objective set upon the network. Most articles say the objective of a network, as a system, consists in creating competitive advantages for the companies, specially the ones related to costs and bargaining power (DWYER, SCHURR and OH, 1987; CRAVENS and PIERCY, 1994; PIERCY and CRAVENS, 1995; HOLM, ERIKSSON and JOHANSON, 1996; TURNBULL, FORD and CUNNINGHAM, 1996; PEREIRA and LUCE, 2002). Setting off to this objective leaves the consumer out of the system. An alternative, from Druker (1993), would be setting the network's objectives the same as a company's: to serve and create value for society.

## **5. COMMENTS ABOUT THE RESULTS**

The analysis of the contents of the 82 texts has shown a contradiction between the claimed importance of the consumers, placing them as participants in the network, and the absence of the analysis of their participation in the formation of networks and the management of its relationships. The consumer does not appear as actor/consumer (his expectations, perceptions, satisfactions), does not show as an actor with power (in relationship rules) and does not show as actor/productive (influencing production decisions), which are convergence points in the articles when considering the network a social structure. The network ends where the consumer begins, although his presence is noticed, with comments on variables that could be considered when doing research, such as trust, interdependence, personal interests, former experiences and perceptions of uncertainties about the results. All of them are applicable to the consumer that is part of the network. However, upon deciding the course of the research, the authors focus only on the companies.

The explanation for this contradiction consists in the predomination of a classic view on production and relationship from the participant companies' side. The phrases about the importance of the consumer would be theoretical obligations instead of real commitment. Hunt (1983) had already talked about this contradiction when doing a revision about Marketing literature. The following texts are examples of a break on that contradiction. O'Farrel e Moffat (1991) puts the consumer as active in companies, but does not talk much about the concept of networks. Some years later, the same author and another partner (O'FARREL e WOOD, 1999) in an article about strategic alliances in services say the literature on networks fails to recognize the importance of relationships with consumers. Despite this, authors do propose neither a theoretical approach, nor lines for research. Luo *et al.* (2004) have made a simple, yet important, study, showing that the relationship with consumers results in bigger correlation with the



competitive results of the company than the social capital resource, understood as suppliers' networks. Faria (2003) did article revision and affirmed the need for managers to cooperate with the key client as the only way to guarantee strategic viability of networks. Other efforts for comprehending the inclusion of the consumer in the networks' relationships can be listed (BLODGETT and ANDERSON, 2000; DAVIES, GOODE and MOUTINHO, 2001; HU and TSOUKALAS, 2003; COX and MOWATT, 2004), of which the content analysis shows a line of thought still underdeveloped, with the use of traditional and reductionism models to comprehend the consumer, such as demographic typology.

To sum up this item: most authors do not consider consumers a part of the network, even though they put sentences about the importance of their presence. The few articles that analyze the consumer show theoretical gaps, especially on concepts about relationships, still coming from the Sociology of defined roles, from the Personality Types, dominant in the decades of 1930 and 1940. A new social structure powered by the technology of information, that creates unions between opposites, such as customization and scale (the processes are done in scale, however customized, such as custom ordered cars), points towards the need for new approaches to understand consumers, which can go over the focus on people as units of study, reaching the dyadic of the network's participants.

## **6. PROPOSITION OF A THEORETICAL MODEL OF NETWORKS THAT PUTS THE CONSUMER AS ACTIVE PARTICIPANT**

Based on the results of the bibliographical analysis, which confirmed the former affirmation referring to the absence of the consumer in the reasoning about networks, a referential model that fills the theoretical gap and creates guidance for researches has been formulated.

As principle of social structure, it is affirmed that current human relationships happen in networks. The network is understood to be a specific form of social structure of the information era, relative to people's positions in relationships of production, consumption, experience and power (CASTELLS, CARDOSO, 2005). It is different from the social structure of decades before, where there was a predomination of small social groups' influence, such as families. The post-modern characteristic of the human behavior is its plural character; ephemeral and incoherent; including his condition as consumer (CINNER, BODIN, 2010). The consumer is flexible in his ideas and customs, taking part in small daily causes, without any deep involvement. The understanding of this new kind of consumer demands concepts beyond traditional models of types and social roles. The identity of the new consumer is, now, negotiated in the complex social interactions in which he is included, in a mutation of representations, in which a same person represents several demands, without uniformity or consumption pattern. A theory of social relationship, even if specific for commercial relationships, must take into account this social structure instead of setting off, as has been happening, from the assumption of clearly defined social roles in small groups.

As theoretical principle, the main affirmation is that networks must include the consumer, because without him the concept is meaningless. There must be a compromise of the researcher in putting the consumer in the study, widening the concept of network, still very influenced by an idea of *cluster*, of limit in number of actors. The main unit of study of the networks is the dyadic, which structure is constituted by the actors, in their different social roles, in different relationships; by the activities, which would be the contents and flows of the meetings and by the form of the relationships, as the presence and strength of variables such as power, control and trust. About the participants, as was already highlighted in the last paragraph, current theories that affirm the multiplicity of peoples' roles in different situations and moments must be considered. About the activities, an integrated systematical vision must be considered; which gives meaning to the contents, according to the established final objective. According to this proposition, the final objective is to create an experience of value for the consumer, which turns into competitive advantage. An isolated advantage obtained in the network (such as negotiation power) has only any meaning when it results from an experience of value for the actors, specially the consumers (for instance, in a lower final price). Following this line of thought, researches that seek to analyze competitive advantages must look for them in the dyadic of the consumers. About the forms of relationships, what must be considered is the subdivision of interdependence and cooperation, with the current approaches about the variables present in commercial and social relationships, such as available time, the former information, the participants' authority and the trust. The latter appears frequently in studies about networks, but never includes the consumer.



In support to this group of theoretical propositions some articles can be listed, such as Nohria e Eccles (1992) that affirms it is possible to understand strategy as companies' practice from the social networks. The social networks, evidently, include the consumer.

As methodological principle, coherent with the social model and the multiple roles theory, it is adequate to utilize the reasoning of complexity. According to Morin (1991) the human being, including the researcher, must live with the uncertainty and with the multiple connections between the whole and the part, which make them inseparable. The adoption of this principle in the planning of researches leads to a lessening in the use of positivistic methods, with prospective objectives. The research becomes basically qualitative, seeking to constitute descriptions, analysis and interpretations of the phenomenon and, secondarily, creating hypothesis about future developments. As basic techniques of qualitative researches, what is valued is the use of observation, the following and the report from the actors. Despite being little utilized in Administration, following researches eliminate some biases present in the reports.

As data analysis techniques it is suggested mainly content analysis (like it has been done in this article) and structural equations. The content analysis covers an array of techniques wide enough to deal with written data, occurrences' data and actors' reports, among others. In the planning it is necessary to decide whether the objective is to raise new categories, in a pioneer exploratory study, or utilize the ones already present in the literature, when talking about themes that have been investigated. It is also necessary to plan what will the unit of study be; a word that repeats itself, or ideas in random excerpts, or the themes in the whole text. In some cases it is possible to do quantifications, such as the number of times a given word appears in the material, but this information must be integrated in the planning context, that is, having performed the groupings and descriptions, the most important part must be done; the development of analysis, inferences and interpretations. It is this part that creates hypothesis, allowing the emergence of new models, or the development of the ones that already exist.

The analysis technique of structural equations allows the establishment of relationships, when that is of interest. Some traditional relations in Administration can be developed between an antecedent variable and performance variables, like, for instance, relating the actors' expectancy to the amount of sales or satisfaction. Despite being originally a quantitative technique, the structural equations model allows the analysis of qualitative data, with semantic differentiation scales, testing for the existence of relations between variables. The semantic differentiation scales are not ordinals, therefore the analysis is not as conclusive as in a quantitative research, but may offer clues for new researches, once it tests hypothesis about relations.

Utilizing this methodological and theoretical model of approaching the phenomenon and planning of researches about networks, it is important to consider the possibilities and limits of the conclusions. To accept the principles of complexity, with the uncertainty, implies in analyzing the past and present of the network, without prospective objectives, although it is possible to formulate hypotheses about the future. The choice of researches that favor qualitative variables and observations techniques results in interpretations, with a short-ranged applicability. This limitation is necessary when investigating a phenomenon that has no theoretical frame defined yet. The use of structural equations is an alternative way that permits the making of hypotheses pointing towards quantitative researches.

## **7. RESEARCH THEMES**

Now it is possible to present the array of researches that include the consumers in the networks, something until now inexistent. The starting point of the themes is the key-words of the relationship: the relationships of consumption, of production, of power and of experience in the network, as was already commented. These factors constitute the central piece, from which other variables derive. In traditional research thinking, of the antecedents and consequents, it is presented a structure of themes, in Figure 1, among other possible structures (remembering the complexity accepts multiple relations). The group of variables was determined from the analysis of the texts.

In this drawing it can be seen three big blocks, which can be modified according to the nature of the hypotheses of research:

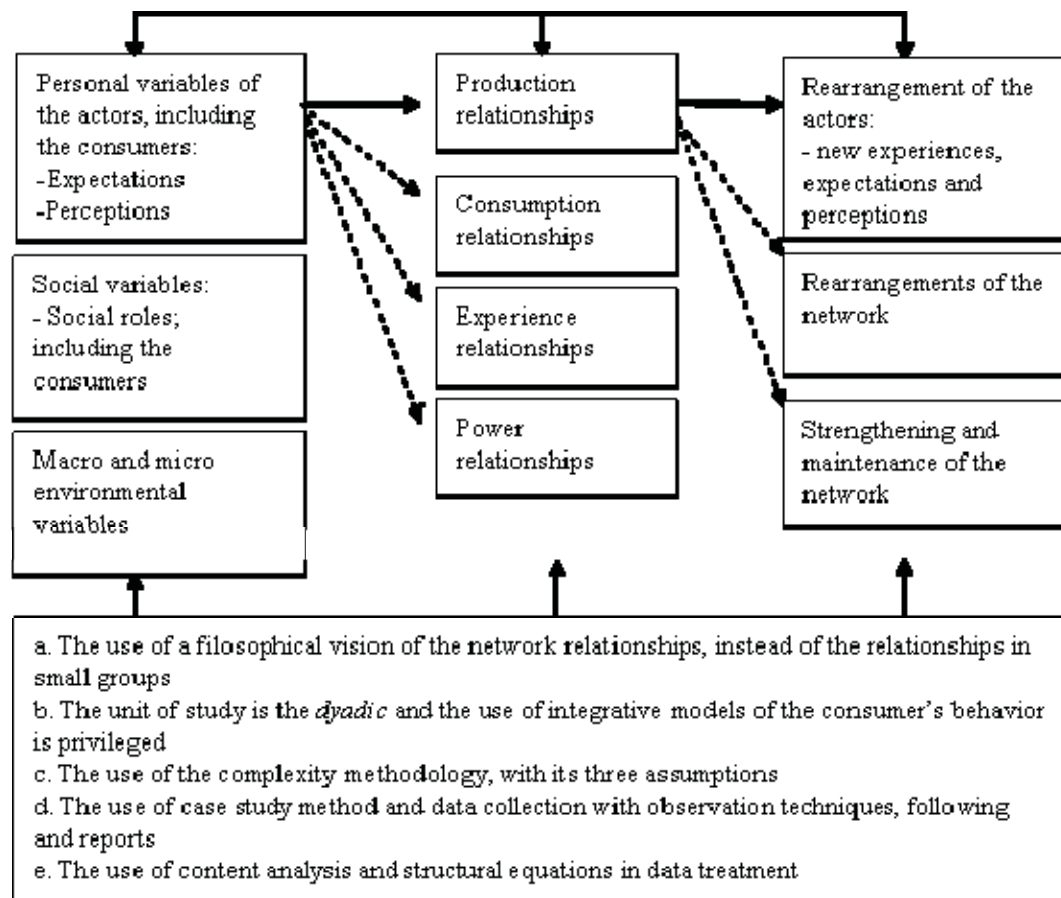
1. Antecedents: as much about the emergence of networks; as of the insertion of a new actor.
2. Relationship: the four basic modes of relationships
3. Consequents: basically its rearrangements.

Each factor is constituted by a group of variables (3 antecedent variables, 4 variables of dynamic and 3 consequent variables) and each one of them may contain (or create), subdivisions of variables. The

consumption relationships, for instance, can be divided in search, acquisition and use. As support for the variables, in the lower section of the drawing, there are theoretical and methodological starting points that orient the planning of the researches. The model, evidently, assumes all lines of relationships and all directions, but they were not drawn to be shown as reasoning. The part that is highlighted by a full line shows a research theme, being able to generate, for instance, the problem of the relation between the actors' personal variables (the expectancies and/or perceptions in the relationships) in the relations (rules) of production in the networks and how the result influences on the strengthening, or weakening of networks (in example, number of contacts, or sales). A business with high technological integration, such as ATM points (bank services points), would be a good example of research on consumers' expectations, the services' moments and fidelity to the company. The opposite direction is perfectly possible: it sets off from a network that has as its strategy the fidelity of consumers, getting their participation (for instance, doing a *round table* with the consumers, explaining the ATM network). From the consumers' experiences, it seeks to analyze the changes in their expectations.

This simple crossing of personal variables of the consumers with relationship variables and consequent variables alone allows for 12 research themes (1 personal variable x 4 relationship variables x 3 exit variables). The same happens to the social and environmental variables, for a total of 36 research themes. If there is interest in finding interrelations between the variables, or making sub-divisions, the list grows very long. The consumer is present in every link, opening at least 36 more direct research themes about the consumer in the networks. If we consider that the proposed methodology, that is, the content and structural equations analyses, generates new hypotheses and relations, the research array becomes even bigger. That way, the emergent theme about networks gets an unexplored research field.

Figure 1. Proposition of a model for research of networks, putting the consumer as an important actor.



Source: The author, 2012.

As examples of variables unfolding it can be listed:

- In the factor *experience* it is suggested themes such as the learning of the actors in the networks, cooperation versus opportunism, resistances and social representations.
- In the factor *consumption* it is recommended the analysis of the relationships between actors in the three big stages of consumption – the search, the acquisition and the use of products by the consumers.
- In the factor *production* there is the appearance of the theme about relationship in the processes of creation and development of products (in business such as architecture, or consulting).
- In the factor *power* it is suggested the themes dealing with the control games in relationships, with variables utilized in negotiation processes, such as trust, nature of information, available time and authority.

These are known themes, but the advance lies in the inclusion of the consumer when analyzing networks. Inside personal factors, that are directly linked with relationships, the varying expectations and perceptions deserve a highlight, and are operationally defined in Woodruff (1997) and Moscovici (1988) respectively. The expectation refer to what each actors expects as a result from the relationships, be it in the social plane, or in the commercial plane of product use. The perceptions are the social representations that each actor utilizes about the people and the objects of a relationship, in a game of influence, as shown by Moscovici (1988).

The factor of network strengthening, placed in the consequents' block, refers to the great theme of management of the relationship in networks. Here some sub-themes appear such as: management of complaints in services networks (banks, automobile sales, health plans), management of the participation of consumers in the development of products (real estate networks, Internet sales networks), management of consumers' fidelity (credit card networks, or gasoline station networks). As case study, it would be worth it to analyze and interpret the appearance and maintenance of networks from consumers' demands, such as in integrated consulting projects, for organization buyers, or architecture projects for consumers. The government demands as participant and consumer would also generate interesting works. The development of the consumption of a product on the Internet, such as an automobile, or an open source program, like Linux, would also be interesting.

## 8. FINAL COMMENTS

The aim of this work was to present a theoretical model and a research themes proposition that includes the consumer in the reasoning of networks, having as base the concepts of social network and market orientation. The proposition was born from the analysis of 82 theoretical articles and reports of cases about networks from some countries, of which the objectives included the consumer. The analysis has shown the consumer is absent, either theoretically or in practical propositions.

Inferences from the authors consider that the existence of the gap is due to the absence of a philosophy of orientation for the consumer; failure in knowing and using more recent social models; use of old theories about the consumer and the processes of consumption and the absence of a methodology that puts the consumer in the center of the reasoning. Such situation occurs due to the pre-paradigmatic stage of scientific evolution of the network theme, in which theories with premises applicable only to individual companies (like competition and control) are found, that are inadequate to explain the phenomenon of cooperation and interdependence, which are the great defining convergences of networks.

Applying the content analysis methodology (BARDIN, 2004) 82 texts were analyzed, being 49 with some theoretical discussion and 33 of case presentations. It has been verified that the consumer is affirmed to be important, but his participation is not analyzed, being predominant the studies about the advantages obtained by the supplying companies. The few articles that valorize the consumer utilize classic concepts of consumption behavior, faced to the individual analysis, or personality types; which are insufficient for the analysis of relationships in the networks.

The word *relationship* is the great convergence in texts, at times discussed in a social context, at times in a management context. The networks are created by the necessity of relationships, are maintained through them and end because of them. The consumers are absent from these analyses, save a few exceptions (BLODGETT and ANDERSON, 2000; DAVIES, GOODE and MOUTINHO, 2001; HU and TSOUKALAS, 2003; COX and MOWATT, 2004). The assumption that is utilized by the vast majority of researchers is that the objective of networks is in the gains of production and competition and not in the relationships with the consumers. It can be affirmed, utilizing Krapfel, Salmond and Spekamn (1991) observations that the stories of networks cases are about power, competition and cooperation between companies, in an evident exclusion of one of its actors.

To explain this exclusion four analyses were presented, which aided in the construction of the proposition. The first one affirms the absence of adequate social theories that include the network phenomenon. The theories of small groups restricted the complexity and multiplicity that define networks and human relations, as said by Morin (1991) and Castells (1999).

The second explanation is that there no clear concept of consumer and also of his participation in the definition of products, a fact already widely known in Marketing, specially in Relationship Marketing and in Value Strategies for the consumer (GIGLIO, 2002; PRAHALAD and RAMASWAMY, 2004). Explain the consumer in networks from his personal traits is to not recognize the flexibility of the behavior in networks and in consumption in general. Renowned authors, like Baudrillard (1998) and Morin (1991), are also not found to have talked about the complexity of consumption in the contemporaneous human relations.

The third explanation is that the network theme constitutes an area of great complexity, in the sense of having many variables and systemic relations, of which knowledge is still in a stage of pre-paradigmatic development, as Kuhn (1970) concept. A dominant body of theories has not been created yet and the approaches are tied to old principles applied to a new phenomenon. As a consequence of this scientific situation, the prescriptions are superficial and underdeveloped, previous to the most radical understanding of the expression *orientation for the consumer*.

The fourth explanation refers to the methodological reasoning of texts, centered on analyzing the advantages obtained by the companies of the network, assuming this is the meaning of the participation in the networks. Although the convergence points in the texts – the relationship, the cooperation and the interdependence-; show a wide social scope, the authors focus the results for the companies and not the consumers, or even the network itself, in the sense of strengthened relationships. Utilizing systemic reasoning, it can be affirmed that there is a stray from the final objective, putting secondary objectives, such as resource control, as more important than the final objective, which is to propitiate experiences of value for the consumer.

Considering these four gaps and the inferences of the authors, a proposition has been created, with theoretical and methodological principles and a group of research themes. The model can be seen in Figure 1, constituted of three groups of factors: a. the antecedent factor of the networks, constituted by the personal variables present in passed, present and idealized relationships; the social variables and the macro environment variables; b. the factor of *relationship*, including relations of production, experience, consumption and control; c. the factor consequent of the network, that is its rearrangements. The various crossings on a single line of causal relations of the three factors, that is, only from the left to the right, immediately create 36 research themes. Since the model accepts complex relations (not strictly causal), this number grows even more.

To overcome the four gaps, it is suggested that researchers abide by the following premises:

1. To utilize current social theories, that comes from a philosophical view of social networks and not from strict social roles. In this view the broad social and the restricted social of the companies of the network are different parts of the same phenomenon. Texts such as Castells (1999), Brito (2001) and Parente (2004) have discussed the understanding of the behavior of authors from a social background.
2. To consider the dyadic as unit of study and utilize integrative models of the consumer, that valorizes his relationships, instead of analytical models, that consider his traces. In the dyadic there are the visible relations, such as exchange of objects or information and there are other concomitant exchanges, such as trust, control, hope and other wider ones, such as the social situation of the ones involved and the uncertainties of the environment. All is there, in a single dyadic.

The dynamics and complexity of the relationships of the consumers in the networks can be understood by integrative and descriptive models, instead of analytical and prescriptive ones. Authors with relevant contributions (TUCK, 1976; O'FARREL and MOFAT, 1991; GIGLIO, 2002) supply a theoretical basis for researches on the relationships of the consumers in the networks. Emergent themes and areas like Anthropology of consumption (VILAS BOAS, SETTE and ABREU, 2004) and the social representations (MOSCOVICI, 1988) can contribute for the specification of the variables put in Figure 1.

3. To utilize preferably the complexity methodology, with its three assumptions about uncertainties and disorders, instead of positivistic methodologies. According to Morin (1991), an analysis of complex phenomenon's can be started by the general to reach the particular, or follow the way from the particular to the general. This is the holographic principle, which affirms that the whole is represented in the part and vice-versa. The other two principles of the complexity are the dialogue between order/disorder – a phenomenon organizes itself for a short time, followed by new disorder and the principle or recursive



organizational - each moment is simultaneously producer and produced, which allows certain independence of the causal relations (MORIN, 1991: 89).

4. To utilize preferably the method of case study and to obtain the data from observation techniques, followings and reports. Considering the former items, the most adequate would be the use of the method of case study, as Yin (2001), in an exploratory perspective. The methodological question that would orient the researches could refer to the relationship bonds of the consumers with the companies and to the final results of the experiences of value of the persons. Some promising themes would be: the ways of information exchange between the parts; the joint development of concepts of products and changes of said products, from information from the consumers; the commitment between the parts; the motivation and participation of the consumer in the formation of *ad hoc* networks. When talking about case study, the observation, following, action survey and report techniques are more adequate. The participation of the researcher is not a bias, on the contrary, it is coherent with the notion that we all live in networks.

5. To analyze the data preferably by the content analysis, with due care concerning conclusions and generalizations. The content analysis according to Bardin (2004) is a group of techniques that can treat data from a vast array of sources, bringing them together in a process of analysis-synthesis. The data treatment evolves from the evident (the text, the speech, the written report, etc.), to the categorization (synthesis), the inferences (the relations between categories) and the interpretations. The orienting categories would be the ones presented in Figure 2. The interpretation would be oriented by the theory of dyadic, of which the fundamentals have already been presented.

These five points, therefore, create an orienting model of theoretical principles and research lines that seek to solve the existent gap in texts about the presence of the consumer in the networks. The work moves beyond the perception of other authors (PEREIRA, 2002; GIGLIO and KWASNICKA, 2005), that had already pointed out flaws, but had not offered a path. The proposition must be refined with the development of researches in the area, since it contains some points that may cause confusion and restrictions. One of them refers to the unit of study, which is the dyadic, in its constitution of participants, activities and relations. Care is necessary so the mistake of analyzing the consumer as unique and independent when applying the variables of expectations and perceptions is not made. They only obtain meaning when inserted in the social context. Another point that may bring up questions is the operation of the complexity methodology. The Administration has evolved from the positivistic causal reasoning to a systemic reasoning, in which reciprocal relations are accepted, but the networks theme demands a step higher, the complexity one, in which there is the predominance of uncertainty and disorder. The researcher has to keep in mind that he will not come to predictions. As written by Parente (2004) the network phenomenon seems to oscillate between earth and smoke, because in one moment it is organized and steady, but in the following moment it vanishes.

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# A TREATISE ON THE SPECIAL POSITION OF EXECUTIVE COMPENSATION IN DEVELOPED ECONOMIES AND A DISCUSSION ON TURKEY

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## ABSTRACT

*This study aims to examine the special position of executive compensation from a variety of viewpoints. Firstly, comprehensive definitions of executive compensation and its agency problem dilemma will be given. Existential problems of the concept such as doubts on the necessity of the concept and increasing effects of networking will be discussed. The differences between the positioning and tool usage between developed economies and Turkey will be expressed.*

**Keywords:** Executive Compensation, Agency Problem, Turkey

## 1. INTRODUCTION

Recently, there has been a dramatic increase regarding the concerns for executive compensation. Beneath that concern we can see the collapse of huge enterprises due to frauds in auditing and executive policies caused by inflating the revenues (Henderson, 2003). Such inflations helped executives gain large amounts of extra income due to stock options or restricted options which were given to them as compensation policies. Balachandran *et al.*'s (2010) findings point out that the equity based compensation has contributed to the latest financial crisis. Even before such collapses in the business world, high amounts given in compensation packages of CEOs, top executives and board of directors were argued especially in USA (Foster, 1981; Main, 1991; Zajac and Westphal, 1994). It has been discussed for 70 years with more than 300 studies (Barkema and Gomez-Mejia, 1998). In the long-term perspective study of Frydman and Saks (2010) covering the years of 1936-2005, we see that there is an acceleration in the position of payment after 1970s, and there is a relation between firm performance and such compensations. But interestingly, the effects of increase in income and also change in social trends are affecting this situation. In the literature, it is seen that USA gives much compensation than Japan and OECD countries to their top executives (especially to CEOs) (Abowd and Kaplan, 1999). After the 2007-2009 financial crisis, American government's bailing out companies made public extremely sensitive about the companies. Especially, bailed out American International Group's (AIG) plan to give big bonuses to their management resulted in a public outrage (Andrews & Baker, 2009). In the end, the public pressure resulted in an increase in government initiative that in the case of bailed out companies such as American International Group (AIG), Ally Financial and General Motors (GM), American Treasury even stopped their compensation package increases in 2011 (Younglai, 2011).

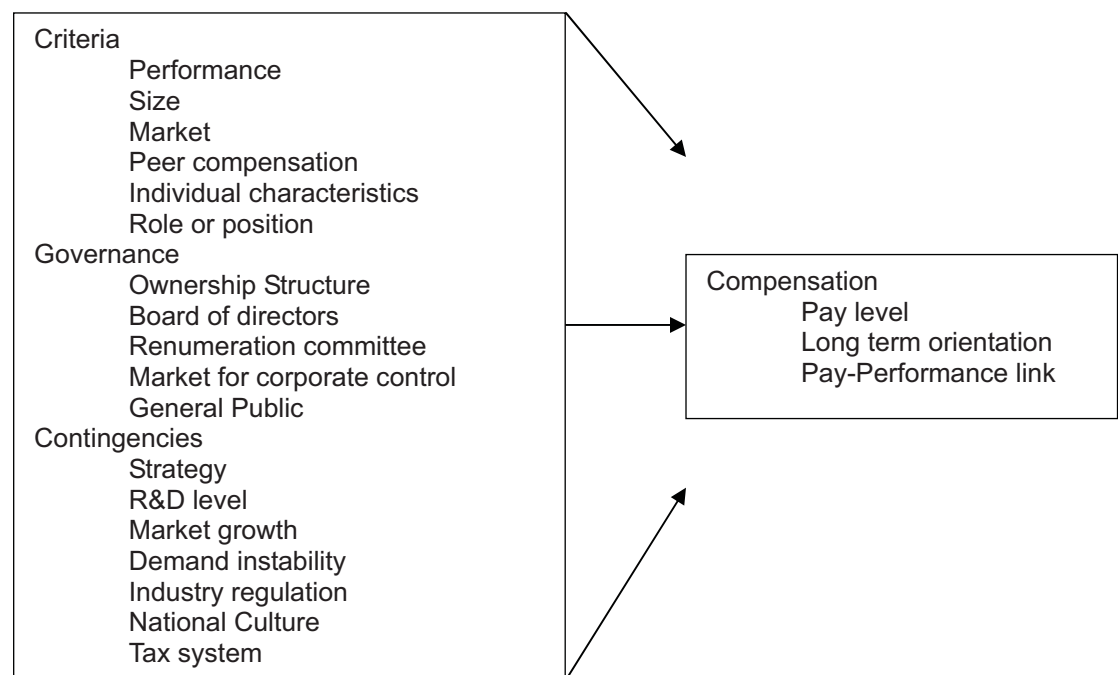
In this study we shall not focus on these incidents on the perspective of agencies. Yet, we shall point out that we are not having a reductionist view that shifts the blame on primarily on some elite actors or the market conditions. Because such a blame shifting approach will be a rhetorical approach that is being fed by the mainstream studies of the latest crisis (Riaz *et al.*, 2011). The compensation policies for executives taken as a solution of agency problem has caused important complications in corporate governance practices that can't be reduced to a matter of abusive elites. In a very general sense, with the compensation packages, alignment of shareholders and management is provided (Yu and Zhang, 2004; Zajac and Westphal, 1994; Bebchuk and Fried, 2003). In addition to these, there are discussions about what determines or affects the compensation package. Main factors are; performance of the firm, responsibility of the executives, affect of size of the company, growth of the firm, return to shareholders or the market equilibrium. In this study we aim to provide a critical view on the compensation policies regarding executives. With such a perspective, we provide an epistemological discussion in order to gain a deeper understanding of the *raison d'être* of executive compensation.

## 2. EXECUTIVE COMPENSATION CONCEPT

First we shall make a basic definition of a compensation package for executives. Henderson (2003) defines the components of an executive compensation plan as follows,

- a. Base Salary
- b. Short-term performance bonuses
- c. Variety of equity (stock ownership) and equity-related components
- d. Long-term performance bonuses
- e. Severance packages
- f. Retirement programs
- g. Wide variety of benefits and perquisites

In the literature, the variety of equity and long-term performance bonuses are discussed in detail. Abowd and Kaplan (1999) examines the long-term compensation including stock options, restricted stock and performance share plans. Barkema and Gomez-Mejia (1998) provided a more comprehensive frame about the executive pay, they expressed that executive compensation should be based on three factors; pay level (total amount of pay received by executive), long-term orientation (the extent to which a compensation package contains a high proportion of equity-based compensation) and the strength of the connection between CEO pay and performance. The groups of determinants of executive pay can be seen in Figure-1.



**FIGURE 1: BARKEMA AND GOMEZ-MEJIA COMPENSATION POLICY**

Barkema and Gomez-Mejia points out that there have been many studies about executive compensation and they could not show a comprehensive model for executive compensation, and it is still not enough to have a frame such as their compensation model. Because there is a need for more multidisciplinary studies with insights from other theories such as agency theory, social comparison theory, strategic management.

This model is useful for us to analyze compensation packages because former researches are lacking these points, and this model helps us to see what would determine the compensation package rather than just performance of the firm, size affect or market equilibrium about compensation packages. But there are some additional researches that would show there are some points analyzed in order to find out

whether there is relation to executive compensation. For instance, Lambert *et al.* (1991) found out that changes in an executive's compensation are not primarily driven by changes in organizational size. In a study of UK's 241 largest industrial companies a significant link has been found between top executive pay and the return to shareholders of the companies. It shows that executive compensation policy serves to effect incentive alignment between the executive's and shareholders' interest (Main, 1991). In a very former study it is found that there is a relation between profitability and growth of the firm and determination of executive pay (Meeks and Whittington, 1975). Jensen and Murphy (1990) have expressed a disappointment at the low pay-for-performance sensitivity of CEO pay. In an earlier study by Ungson and Steers (1984), we can also see examples of decreasing average return on stockholders' equity, that happens when there is an increase in the pay of executives. It shows that there is no constant relation between performance and executive compensation.

Abowd and Kaplan's (1999) study concentrated on 6 questions for determining executive compensation. These questions are

- How much does executive compensation cost the firm?
- How much is executive compensation worth to recipient?
- How well does executive compensation work?
- What are the effects of executive compensation?
- How much executive compensation is enough?
- Could executive compensation be improved?

With the help of these questions, authors tried to draw a frame from different aspects. But it was not easy to clarify the answers for 4<sup>th</sup> and 5<sup>th</sup> questions, as they are interacting greatly with the macro economic variables.

Besides these questions that were focused mostly on economist views, Foster (1981) has already questioned about some managerialist issues such as power, politics and influence factors in determining executive compensation. In former studies, Albrecht and Jhin (1978) examined the affect of industry, corporate power structure and bargaining skills of executives. It is also stated that compensation plans involve stock options, perquisites, employment contracts, and consulting fees (Henderson, 2003). Foster (1981) has enriched the field focusing on responsibilities and performance of an executive in order to determine the compensation package.

Ungson and Steers (1984) focused on mostly on motivation and politics as determining executive compensation and pointed the inconstant relationship between performance and executive compensation. Accordingly, they offered another model called **political model** while labeling the existing models focused on performance as **functional-rational model**. With respect to political model, executives and organizations are analyzed on the basis of political behaviors and related decisions. That model set basis of reward allocation on CEO's role as symbolic and political figurehead and effectiveness of CEO in using political process to facilitate organizational goals rather than emphasizing short term and long term financial performance.

Zajac and Westphal (1994) took a different approach and used state agency theory as a base for managerial compensation and they made a comparison to see whether agency theory or human resource justifications determines executive compensation. Accordingly, they mentioned that for the long term compensation components both agency theory or human resources approach can be employed. But they underlined the important difference that agency theory is more focused on control of the management while human resource approach is more focused on keeping the executives in the firm. Because it assumes that executives is so valuable that it is worth to pay them a lot to keep them in the firm. And according to their study, recently agency justifications are more valid in order to protect the firm and adopt new formal structures to the organization.

In an another study about executive compensation and association of executive compensation with agency problem, Bebchuk and Fried (2003) mentioned that there are good theoretical and empirical reasons that managerial power has substantial affect over the design of executive compensation in companies with a separation of ownership and control. And this creates an agency problem that has significant implications for corporate governance. In order to analyze agency problem, executive

compensation can be a useful tool under managerial power approach instead of using optimal contracting approach that causes unfavorable results for shareholders. We see excessive payment practices to executives makes them at least reckless to ride the bubble till they burst (Beecher-Monas, 2009; Raviv & Landskroner, 2010). And even worse, they can manage to exit financial disasters with a positive financial position, like it can be seen in the analysis case of Bear Stearns and Lehman Brothers 2000-2008. Even though companies faced financial disaster, in both companies' executive teams' cashed out incomes coming from their compensation plans was large enough to make up losses, they could be in positive position in the end (Bebchuk *et al.*, 2010).

There is a real need for transparency of the compensation information about executives, because executives have a great power to manipulate information about their actions and possible consequences especially in the short terms (Axelson & Baliga, 2009; Bhagat & Romano, 2010). They are in decision making positions that enables them to manipulate the compensation setting procedures (Faulkender *et al.*, 2010). In the end, executive compensation affects many organizational decisions from investment and financial policies to risk taking and manipulation (Frydman & Jenter, 2010).

It is argued that the research data concerning whether if CEO payment is excessive is inconclusive (Faulkender *et al.*, 2010). So this means that CEO's being paid wage depending on inconclusive situation. Even the lack of alignment between compensation and executive payment (Fachlenbrach & Stulz, 2011) is an interesting phenomenon. When you suggest that there is no real alignment, it raises the question that why do we have to pay more for something that has no alignment to any direction?

### 3. EXISTENTIAL PROBLEMS

While analyzing executive compensation in different contexts, studies lack an important factor. Mark Van Clieaf's (2005) study has pointed that missing point. In this study, he questioned the necessity of executive pays and discussed the point that executive pays can be a kind of waste for organization. He mentioned three fundamental questions regarding executive compensation while determining policies. These questions are

- What are the top officers being held accountable for, and how will performance be measured?
- What is the total amount of all compensation paid to the CEO and top executives over multiple years, and how does that relate to accountability, performance and shareholder value?
- Is benchmarking pay across companies truly comparing apples and apples?

While answering these questions, Clieaf defended that compensation committees would be crucial for determining well-organized compensation policies. Interestingly, position of compensation consultants who were considered as an efficient tool to check and control the necessities of compensation system, also became questionable because of their complicated effects on the control of executive compensation; such as the increase in the executive compensation when there is pay consultants (Conyon *et al.*, 2009). Supporting of the elite positions of the managers with excessive financial tools is a major problem in organizational environment, their being supported by the external agents is increasing the severity of the problem. When there is such a dramatic differences about the economic inputs of organizational parties, the relations goes beyond a simple managing problem, it becomes a dilemma of executives becoming a special group of demi-gods that are beyond the concerns of mere mortals. Their godly thoughts results in illusions of grandiose that can cause huge financial collapses. Financial structure is providing top level executives with an economic shield that can feed their vanities without a fear of downfall. And as it is seen above in cases such as Bear Stearns and Lehman Brothers, they can depart the scene of a financial catastrophe without getting much damage.

Even if the increase in executive compensation is done in few firm levels to maintain a better corporate governance, it is becoming the root of another problem, because as it is not a market wide concept, so it becomes a kind of negotiation concept, and it becomes a policy tool for networking (DiPrete *et al.*, 2010). Networks in business has been influential in Enron crisis, they were widespread and powerful (Hirsch, 2003). The problems occurring in Enron can't be taken simply as some executives taking bad moves that were accelerated by their decisions (Marens, 2003), there is a systemic fault at the heart of the macro system that is causing and excessive risk taking on behalf of reaping the best harvest. This is not limited



to Enron only. The blind faith in markets, in self-interest has accelerated the disaster of the present times, agency problem is mainly suffering from hubris of the agents (Weitzner & Darroch, 2009). There is an increasing need for an executive compensation model that goes beyond managerial power or market power, it has to go beyond Anglo-American orientation and has to examine the cultural complications as well (Farid *et al.*, 2011).

#### 4. POSITION OF EXECUTIVE COMPENSATION IN DEVELOPED ECONOMIES AND TURKEY

Because of the recent crisis and scandals concerning finance sector, executive compensation has been a major problem of corporate governance in the finance sector. Yu and Zhang (2004) has shown that there is a weak overall correlation between executive compensation and the financial performance of the banks, but authors expressed their limitations as their study being not long term enough. Because the ratios for measuring performance can be affected by executive's manipulation (Yu and Zhang, 2004), and long term orientation of pay level including stock options, profit sharing, and retirement plans are excluded. Pavlik *et al.* (1993) also found that there is a weak link between firm performance and CEO compensation, but Magnan and St-Onge (1997) challenged the assumption and expressed that if the discretion about compensation is held by executives, there is a different relationship in the banking industry. Accordingly, the higher the level of managerial discretion held by executives, the more contingent their compensation is to firm performance measures such as stock market return and return on assets. They specified the statement as banks with a broadly defined strategic domain (wholesale, international or super-regional orientation) and no regulations in their operating environment (no branching or takeover state regulations) provide their CEOs with compensation that is more performance-contingent than banks with a limited strategic domain (retail, domestic or local focus) or a restrictive operating environment (branching or takeover regulations).

This frame is not limited for understanding the developed countries, it can also be used for examining the business environment in a developing country like Turkey. Even though there are branches of some international players, we see the tradition of banks is mostly based on limited strategic domain. Thus it is hard to find a connection between the executive compensation packages and management discretion. In Turkey it can be argued that there is a market level of compensation policy stated by the huge dominating banks and financial institutions and the rest follow them.

In the context of developed nations, we see that Collins *et al.* (1995) has examined relationship between corporate compensation policies and investment opportunities and took large bank holding companies (banks) in USA as a subject of study, and found out that from 1979 to 1985 total real compensation and the ratio of incentive compensation-to-total compensation increased substantially at banks. Authors argue on the basis of state agency theory suggesting CEOs should be rewarded for exercising these growth options. And they express that the amount of total compensation and the incidence of long-term incentive compensation of large banks are positively related to the expanded investment opportunities available to banks during the 1980s. Although authors focus on overall compensation policy, this study is more concentrated on the factors of a developed nation. In developing countries such as Turkey, the challenge is highly affected by the dynamism of the new regulations about banking industry, new committees controlling the financial institutions, new mortgage discussions and moral hazard problems.

Mayers & Smith (1992) examined the situation of life insurance companies in USA, they compared mutual and stock insurance companies. The study showed that there is higher compensation for executives of stock insurance companies compared to mutual insurance companies, and this situation is caused by corporate investment opportunity sets and managerial discretion. Besides, this situation being also valid for the subsidiaries means that higher levels of compensation for executives for stock versus mutual subsidiaries are caused by managerial discretion for subsidiary CEO. In addition to that, executives in affiliated companies receive lower than similar structured unaffiliated CEOs, and lastly the study points out that stock company CEO compensation is more responsive to firm performance than mutual CEO compensation. It can be seen that the structure of the company is an important factor that determines the executive compensation policies.

In the case of Turkey, structural questions for finance sector in general and especially banking sector



becomes a double-edged sword. In Turkey there is a big competition among financial institutions, but this competition has a major league and minor league (Coşkun *et al*, 2012:60). Big institutions are the locomotives of the industry and they provide better opportunities and alternatives for their managers owing to their financial power. And, as a result, most of the time, the big ones determine the compensation policies and the others follow them. Over the years, because of the increase in the amount of specialists in the industry, the specialist value relatively gets lower, and this situation causes lower compensation policies compared to past. The competitors do not follow them strictly and they also have a common level of compensation policy so that they can prevent losing portfolios and customers tied to managers who can be transferred often.

Before the 1998-1999 economic crisis, there were higher compensation policies and there were very huge amounts of transfer values for the managers, but banking crises, in a way, balanced that values and transfer policies. But this transformation was not caused by a change of philosophy, it was only depending the economic environment change. So the challenging economic conditions and also 2001 crisis and 2008 world economic crisis is effecting the compensation policies in Turkey. Especially after the 2001 crisis, drastic reforms are enacted in the finance sector in order to stabilize and protect the sector from its former vulnerabilities (Bakır & Öniş, 2010; Öniş, 2009). Whilst these reforms adjust Turkey in a more neo-liberal form of governance, it also caused local and international capital to gain much more control in the field (Dufour & Orhangazi, 2009). Some banks are sold to foreign counterparts and multinational banks began to perform in Turkey (Yücel, 2009). This adjustment after 2001 helped Turkish finance sector and banking industry meet with interntional standards and also protected it from further destabilizations (Coşkun *et al*, 2012: 30-32)However, compensation policies did not change a lot. Basic executive compensation benefits are seen more common. It is more based on special perks and advantages for the higher level workers rather than the long term compensation options like stock options. Economic size and financial system's unique characteristics couldn't protect Turkish system from the financial crisis but at least it protected from the excesses of the top level executives. Improving banker's compensation systems in order to prevent future finance crisis, long term orientation will be instrumental in improving compensation systems (Bebchuk, 2010), but it shall not be forgotten that cultural differences about the definition of long and short term will be providing differing results in different countries.

## 5. CONCLUSION

Compensation of executives is an interesting topic since it points out different aspects of the organizational life. The determination processes of compensation packages, the position of the firm in the industry, the elements of the package, the living standards in the country, the actors who determine executive compensation are all different variables just could be mentioned in advance, it takes the question of the executive compensation beyond a mere calculation of the payment. And on the basis of financial institutions' collapse such as Enron and World.com executive compensations was serving as a main catalyst in the process of the downfall of the organizations. So preparing and providing compensation packages should not

only be arranged in order to satisfy different needs, different expectations, it shall also be checked in order to see if they cause wrong motivations that can accelerate failures and become a major factor in an unexpected collapses. Networking tendency about the compensation initiatives seems to be a growing but hidden threat in the process, that can result in another manipulation of the shareholder benefits. In comparison to developed countries, Turkey situation looks less in favor of excesses in executive compensation. But it shall not be be ignored that macro economic factors such as comparatively smaller economic size and lesser integration with the stock exchange system are effecting this favorable situation. There is a need for studies that integrates the macro level variables more into the study of executive compensation and also examine the deeper implications of the cultural environment.

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## EXPLORATION AND EXPLOITATION: DO ACTUAL BEHAVIORS MATCH INDIVIDUALS' PERCEPTIONS?

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### ABSTRACT

*Research on contextual ambidexterity assumes that an organization's capacity to pursue simultaneously exploration and exploitation leverages on organizational solutions encouraging a balance between these two learning orientations. However, still limited attention has been devoted to the investigation of contextual ambidexterity at the individual level of analysis. Starting from this gap, this paper addresses the following research questions: How do individuals perceive the learning orientation requested to them by their job? Do individuals' behaviors match their perceived orientation? How does the matching/mismatching between perceptions and behaviors can be explained? To address these issues a multiple case study across 16 managers and assistants of R&D and Sales units of four medium enterprises located in Northeast Italy was carried out. Our findings show that the perceptions and the actual behaviors, as component of the personal ambidexterity, are distinct and independent. Perceived and actual orientations emerge in various different combinations creating a mismatch at individual level as well as some inconsistencies between different hierarchical levels and business units. The determinants of these inconsistencies can be explained by considering the individuals' working experiences, their expertise and motivation and also the decisions and changes in the firm processes in which individuals have been involved.*

**Keywords:** *Exploration; Exploitation; Ambidexterity; Learning orientation; Individual behavior*

### 1. INTRODUCTION

The ability of a firm to exploit its current capabilities as well as to explore new opportunities represents the core of the organizational learning process.

In his seminal definition, March (1991) considered exploitation and exploration as the opposite ends of a continuum, providing arguments to support their incompatibility. Therefore, the trade-off to pursue both orientations has been tackled for a long time suggesting ambidextrous solutions. On the one hand, structural ambidexterity implies a differentiation between units and people in charge of experimenting new activities or exploiting existing solutions (Tushman and O'Reilly, 1996; Benner and Tushman, 2003); on the other hand, cyclical or sequential ambidexterity calls for the alternation between long periods of exploitation and short bursts of exploration (Siggelkow and Levinthal, 2003; Rothaermel and Deeds, 2004; Simsek et al., 2009).

Adopting a different approach, research has conceptualized exploitation and exploration as orthogonal learning orientations, emphasizing the benefits firms attain by achieving exploration and exploitation simultaneously (Gibson and Birkinshaw, 2004; He and Wong, 2004). Accordingly, contextual ambidexterity maintains that the organizational context should be designed to enable and encourage individual behaviors toward both learning orientations, and thus to support individuals to switch between different mind and action sets in accordance with situational demands (Gibson and Birkinshaw, 2004; Raisch and Birkinshaw, 2008; Raisch et al., 2009).

Despite the valuable insights that the body of literature on ambidexterity has provided, a main limitation can be highlighted. The concept of ambidexterity, adopted at the firm level of analysis, is still underdeveloped at the individual level (Rosing et al., 2011). To this regard, recent literature reviews highlighted the need for studies spanning multiple levels of analysis (Raisch and Birkinshaw, 2008; Raisch et al., 2009) and in their theoretical contribution, Raisch et al. (2009) point out the need for exploring further the individual dimension of ambidexterity (*personal ambidexterity*) since providing insight into individuals' exploration and exploitation activities may contribute to the understanding about how to build exploration and exploitation within a unit or firm (*organizational ambidexterity*). Yet while the interplay between firm and individual level seems to be a key issue in organizational learning debate (Antonacopoulou, 2006), only few empirical research has tackled the individual dimension of ambidexterity



(Mom et al., 2007; 2009). These studies conceptualize and measure the two learning orientations at the individual level and demonstrate that managers can be ambidextrous. They also provide evidence on the organizational mechanisms that favor managers to engage in exploration and exploitation activities simultaneously. However, that analysis focuses on how managers perceive their engagement in exploration and exploitation activities requested by their job, neglecting a) the concrete behaviors performed by individuals, b) if these behaviors are consistent with their perceptions and c) the drivers that explain the possible consistency or inconsistency. Indeed, even if individuals could correctly perceive the learning orientation expected by their organization, at the same time they might not activate consistent behaviors in their daily activities since they are not able to face the challenge of conciliating the dual demands (Gupta et al., 2006).

Starting from this gap, this paper addresses the following research questions: How do individuals perceive the learning orientation requested to them by their job? Do individuals' behaviors match their perceived orientation? How does the matching/mismatching between perceptions and behaviors can be explained?

To address these research questions a qualitative approach was chosen (Yin 1994). A multiple case study was carried out on 16 business unit managers and their direct assistants of four medium enterprises located in Northeast Italy, which are increasingly facing the tensions between exploration, due to changes on technologies and customer demands, and exploitation, because of time pressures and a strong focus on efficiency.

The contribution of the paper is twofold. First, we extend the concept of personal ambidexterity proposing and defining two dimensions: the *perceived* and the *actual orientations* toward exploration and exploitation. Second, we contribute to the understanding of the relationship between individuals' perceptions and their behaviors, by assessing the level of consistency between the two dimensions and by identifying the drivers of the possible matching-mismatching.

This paper is organized as follows. The next section presents the theoretical background. It delves into the concepts of learning orientation toward exploration and exploitation and the relevance of the individual level of analysis. Then, the method section provides details about data collection. Next, we present the empirical findings and conclude with a discussion of the results and managerial implications.

## 2. TOWARDS A PERSONAL AMBIDEXTERITY APPROACH

According to March's seminal article, exploitation can be associated to terms such as refinement, choice, production, efficiency, selection, implementation, and execution, whereas exploration includes concepts captured by terms such as search, variation, risk taking, experimentation, flexibility, discovery, and innovation (March, 1991: 71).

Empirical research found support for the positive effect of the balance between these two learning orientations both on innovation output and on firm performance (Tushman and O'Reilly, 1996; Danneels, 2002; Katila and Ahuja, 2002; Gibson and Birkinshaw, 2004; He and Wong, 2004). For instance, He and Wong (2004) found that firms that pursue both exploration and exploitation simultaneously achieve higher sales performance. These findings support the general agreement that "variance does not generate returns without some efforts to fix and develop the new knowledge" (McGrath, 2000: 119). Indeed, an overreliance on exploration, that generates both higher potential benefits and higher potential costs, may cause the firm to operate with less efficiency since it is constantly renewing its knowledge base without fully utilizing it (Levinthal and March, 1993). On the other hand, a firm that shows an exclusive focus on exploitative learning, whose returns are more certain and familiar, may risk the obsolescence of its knowledge base.

Despite this positive interplay between exploration and exploitation, scholars have long noted that firms face difficulties in balancing the two learning orientations, since they involve different cognitive orientations, processes and structures that can create paradoxical challenges (Levinthal and March, 1993).

Literature offers three possible ways to balance exploitation and exploration: structural ambidexterity, cycling or sequential ambidexterity and contextual ambidexterity (Gupta et al., 2006; Raisch and Birkinshaw, 2008; Raisch et al., 2009). In all these approaches, scholars adopt the concept of *organizational ambidexterity*, thus measuring it at the firm level, investigating how the company divides attention and resources between activities with explorative versus exploitative objectives. For instance, they analyze the level of importance of introducing new generations of products vs. improving existing

products, or opening up new markets vs. enhancing existing markets (He and Wong, 2004; Lubatkin et al., 2006; Jansen et al., 2006; Cao et al., 2010).

The first approach, structural ambidexterity, conceives the two learning orientations as opposite ends of a continuum and suggests that in order to achieve exploration and exploitation firms could design a dual architecture (spatial separation) in which some units are organized to be efficient while others to experiment and improvise (Tushman and O'Reilly, 1996; Benner and Tushman, 2003; Tushman and O'Reilly, 2008).

Adopting the same differentiation logic, sequential ambidexterity implies a temporal separation between long periods of exploitation and short bursts of exploration (Burgelman, 2002; Siggelkow and Levinthal, 2003).

A different approach is provided by contextual ambidexterity, defined by Gibson and Birkinshaw (2004: 209) as the behavioral capacity to conciliate simultaneously both exploration and exploitation across an entire business unit. According to this approach, exploration and exploitation are achieved simultaneously, since individuals make their own choice about how to divide their time and tasks between exploratory and exploitative activities, for instance between an existing or a new customer. These studies provide interesting insights on organizational solutions that promote ambidexterity at organizational level (Rosing et al., 2011; Brion et al., 2010; Jansen et al., 2008; Jansen et al., 2006; Gibson and Birkinshaw, 2004).

However, existent research neglect the analysis of ambidexterity at the individual level (*personal ambidexterity*). Recent literature reviews call for adopting a micro-foundation approach in organizational learning research (Foss, 2011), and specifically on delving into personal ambidexterity (Raisch and Birkinshaw, 2008; Raisch et al., 2009; Rosing et al., 2011). In this regard, Sun and Anderson (2011) stated that individual actions, and particularly managerial behaviors, may create the conditions for *organizational ambidexterity*.

Among the few empirical studies that addressed the ambidexterity issue at the individual level, Mom et al. define managers' ambidexterity as a "behavioral orientation toward combining exploration and exploitation related activities within a certain period of time" (2009:812). These contributions, besides providing evidence that ambidexterity can be pursued not only at the firm level but also at the individual level, offer new insights on the organizational mechanisms (e.g. knowledge flows, decentralization, formalization) that enable managers to achieve the balance between the two learning orientations.

However, two limitations can be highlighted. First, even though the authors conceptualize individual ambidexterity as a behavioral orientation, they measure it asking the managers how they *perceive* their engagement in exploration and exploitation activities requested by their job. Thus, they do not investigate the concrete behaviors performed by individuals in their daily activity. In an ambidextrous organization, individuals face complex and changing job demands. Indeed, they are expected to switch between different tasks in the course of a day's work and to partition their activities to meet the conflicting dual demands. Individuals who exhibit personal ambidexterity manage tensions in terms of different cognitive approaches and processes requested by contradictory activities, such as efficiency-oriented tasks and variability-increasing tasks (Swart and Kinnie, 2007). Thus, even if individuals correctly perceive the learning orientation expected by their organization, at the same time they might not activate consistent behaviors. The investigation of the possible inconsistency between perception and behaviors is lacking in the current research.

The second limit of the extant literature on personal ambidexterity is that despite it assumes that the challenge of pursuing dual demands on the individual level is not only a question of supporting structures but also of individuals' characteristics, it does not provide empirical evidence on these personal antecedents, apart a recent study which finds the positive impact of motivation on individual ambidexterity (Jasmand et al., 2012). In their article, Mom et al. (2009) describe the three main characteristics of ambidextrous managers: i) they host contradictions, having the motivation and the ability to deal with conflicting situations, ii) they are multitaskers, thus they fulfill multiple activities being more generalists rather than more specialists, iii) they refine and renew their knowledge, skills and expertise. However, these characteristics have not been investigated empirically.

Addressing this theoretical and managerial gaps, our paper adopts a micro-oriented approach advancing the understanding of ambidexterity at individual level. Specifically, we extend the concept of *personal ambidexterity* by distinguishing two dimensions: the *perceived* and the *actual orientations* toward exploration and exploitation. We consider the *perceived orientation* as the orientation felt by individuals as requested to them by their job activities. This type of orientation refers to the way people feel engaged in tasks which require explorative or exploitative behaviors. We conceive the *actual orientation* as the



behaviors enacted by individuals to perform contradictory activities and switch between different mindsets and action sets.

We investigate the relationships between these two dimensions, by analyzing: i) if within firms which pursue both exploration and exploitation goals, managers perceive they are engaged in explorative and exploitative activities at the same time; ii) if the behaviors they perform are consistent with their perceptions. Moreover, we aim to contribute to the analysis of the causes of match/mismatch between perceived and actual orientations. Comparing the two dimensions of personal ambidexterity and delving into the causes of the possible match/mismatch we identify the factors that mold individual level perceptions and behaviors toward a balance between exploration and exploitation or a dominance of one learning orientation.

### 3. RESEARCH METHODS

#### 3.1 Research setting

In order to answer our research questions we conducted an explorative study investigating the learning orientation of 16 business unit managers and operational managers (assistants) of four medium enterprises located in Northeast Italy.

The selected managers lead the R&D and the Sales units that primarily face the tension between exploration and exploitation. Indeed, these units are forced both to explore, due to changes on technologies and customer demands, as well as to exploit, because of time pressures and a strong focus on efficiency. Moreover, the firms analyzed - leading companies in their sectors - were striving to combine in their innovation process both an efficiency-based and an experimentation-based perspective. In addition the firms were selected due to their strong commitment to innovation (in terms of technology and product design) as well as in their growth rate and profitability. However, in order to provide variety in the setting and to overcome the potential biases of a single case (Eisenhardt 1989; Yin 1994), we sought firms with different industry specializations, sizes and ages. Consequently, these organizations represent an appropriate setting to investigate how individuals perceive the learning orientation requested to them by the firm and if their behaviors match the perceived orientations.

#### 3.2 Personal ambidexterity: perceived and actual orientations

The data collection relied on multiple sources, coherently with the aims of this study. According to the conceptualization of *personal ambidexterity*, provided in the previous section, we adopted different research techniques to measure its two dimensions. The *perceived orientation* toward exploration and exploitation was operationalized starting from the existing scale implemented in prior empirical studies on individual ambidexterity (Mom et al. 2007; 2009) and selecting a pool of items in order to avoid redundancy. Therefore, a closed-ended questionnaire aimed to evaluate how each respondent *felt* engaged in exploration and exploitation activities was administrated. Specifically, respondents had to measure on a seven-point scale (1 = “to a very small extent” to 7 = “to a very large extent”) a set of items concerning the way each respondent interprets the characteristics of his/her job activities according to his/her perception. We measured the perceptions towards exploration and exploitation calculating the mean value of the scores on the seven-point scale. We controlled the standard deviation and found that the mean value could be considered significant, due to a low variance of the answers. The mean values were then classified into three classes: Low (scores from 1.00 to 3.00), Intermediate (scores from 3.01 to 5.00) and High (scores from 5.01 to 7.00). Then, we calculated the overall learning orientation, as the result of the comparison of the orientations toward exploration and toward exploitation perceived by each respondent. If the orientations toward exploration and toward exploitation perceived by the same respondent were similar and thus have the same importance (as an example, were both high or both intermediate), the overall orientation has been considered as *balanced*; if the two orientations were different it means that there was a prevailing orientation (towards exploration or towards exploitation).

Concerning the *actual orientation* toward exploration and exploitation, data on concrete behaviors activated by respondents were collected through face-to-face interviews. In particular, these interviews were directed towards gathering a number of *critical incidents* linked both to the working effectiveness and to the achievement of innovative results of each interviewee, according to an adaptation of the Behavioral Event Interview technique. As highlighted by Boyatzis (1998) and Coffrey and Atkinson (1996) the critical incident interview as a form of storytelling is a valuable source of qualitative information. The request to describe the actual behaviors, related to significant performances for the unit, had the aim of

understanding which behaviors the interviewees activated in order to obtain good results. We carried out a thematic analysis of the specific behaviors enacted during the described critical incidents using the content analysis methodology, which was adopted for the operationalization of exploration and exploitation also in a recent study by Uotila et al. (2009). The textual content analysis was carried out by starting from the vocabularies proposed by the literature (March, 1991), in order to link the contents that emerged from the interviews to the concepts of exploration and exploitation. According to Krippendorff (2004), the words and phrases mentioned more frequently in a text are those that reflect the principal arguments of the communication. The authors independently carried out the textual analysis and an inter-rater reliability of more than 90% was obtained. Then, through discussion, they debated the final coding of the words referring to exploration and exploitation. Data analysis started from the counting of the occurrences, that is the number of words associated with exploration and exploitation. For each interview we expressed the total words as a percentage of the total significant words. Finally, we transformed this percentage of the words referring to the two orientations on a scale from 1 to 7 in order to obtain a measure comparable with that of the perceptions. These values were then classified into three classes: Low (scores from 1.00 to 3.00), Intermediate (scores from 3.01 to 5.00) and High (scores from 5.01 to 7.00). We considered the two orientations as balanced when they were represented by the same class and as different when they were represented by different classes according to the criterion already used for the perceptions. The comparison between perceived and actual orientation for each respondent allows to identify the situations of consistency (matching) and of inconsistency (mismatching), as described in the findings section.

### 3.3 Analysis of matching/mismatching

The interview protocol adopted for the field study, in addition to gather information on critical incidents which enabled us to measure and analyze the actual orientation, presented a section aimed to collect data on individual characteristics of the interviewees which allowed us to identify some potential determinants of the possible matching or mismatching between perceived and actual orientation. Each respondent described his/her educational background, his/her professional career path (considering for instance inter-functional or inter-firm working experience), the kind of expertise he/she developed in the private and working contexts, the motivation toward his/her role, main important decisions and recent changes in the firm processes in which he/she has been involved.

By considering this information, we independently generated a preliminary classification of the determinants that could explain the matching/mismatching between perceived and actual orientation. We also relied on tables to refine the constructs and the theoretical explanations (Miles and Huberman, 1994), and we cycled among the emergent theory, case data, and literature to refine further the construct definitions until we achieved a strong consistency between the empirical findings and the emergent theory.

## 4. FINDINGS

In this section we try to answer our research questions on personal ambidexterity. First, we provide the results of our analysis on the first dimension of personal ambidexterity, namely the *perceived orientation*. Then, we compare this dimension with the *actual orientation* that allows us to identify the level of matching or mismatching between these two dimensions. Finally, we identify some determinants of this kind of matching or mismatching.

### 4.1 Perceived orientation

The perceived orientations of the R&D and Sales managers as well as of their operational managers are reported respectively in Tables 1 and 2, section A.

Data show that most individuals perceive that their job requires both an exploratory and exploitative orientation, and this can be observed in both analyzed units and hierarchical levels. This is consistent with the fact that the companies of our sample are promoting a balanced orientations in their business units. However, we find that some individuals perceive that their job activities require to them a prevailing orientation towards exploration (see the R&D assistant of Beta, and the manager and assistant of Delta's R&D) or exploitation (see the Sales manager of Alpha). Moreover, in some cases even if the balance is achieved, the manager and his/her assistant show a different level of intensity about the learning orientations requested to them by their job, as in the Sales unit of Beta and Delta. Since we have not

found perceptions at a low level of intensity, this seems to show that the respondents felt engaged with a certain significant intensity toward exploration and exploitation activities.

In sum, these data on individuals' perceived orientation show that some differences emerged among individuals in terms of intensity of perceptions (high or intermediate), between individuals at different hierarchical levels (managers vs. assistants) and/or belonging to different units (R&D vs. Sales). These differences between the manager and his/her assistant who operate in the same unit, and thus face similar problems and master the same body of technical knowledge, may be symptom of organizational problems in terms of role tensions due to inadequate: i) definitions of the role expectancies, ii) transmissions of the role sent, iii) interpretation of the received role (Katz and Kahn, 1966).

**TABLE 1. PERCEIVED AND ACTUAL ORIENTATION IN THE R&D DEPARTMENT**

	Alpha		Beta		Gamma		Delta	
	Manager	Assist.	Manager	Assist.	Manager	Assist.	Manager	Assist.
<b>Section A: Perceived Orientation</b>								
Score Exploration	High	High	High	High	High	High	High	High
Score Exploitation	High	High	High	Interm.	High	High	Interm.	Interm.
Overall Perceived Orientation	Balanced	Balanced	Balanced	Exploration	Balanced	Balanced	Exploration	Exploration
<b>Section B: Actual Orientation</b>								
Score Exploration	High	Interm.	High	Interm.	High	Interm.	High	High
Score Exploitation	Low	Interm.	Low	Interm.	Low	Interm.	Low	Low
Overall Actual Orientation	Exploration	Balanced	Exploration	Balanced	Exploration	Balanced	Exploration	Exploration
<b>Section C: Match / Mismatch between perceived and actual orientation</b>								
	Mismatch	Match	Mismatch	Mismatch	Mismatch	Match	Match	Match

**TABLE 2. PERCEIVED AND ACTUAL ORIENTATION IN THE SALES DEPARTMENT**

	Alpha		Beta		Gamma		Delta	
	Manager	Assist.	Manager	Assist.	Manager	Assist.	Manager	Assist.
<b>Section A: Perceived Orientation</b>								
Score Exploration	Interm.	High	High	Interm.	High	High	Interm.	High
Score Exploitation	High	High	High	Interm.	High	High	Interm.	High
Overall Perceived Orientation	Exploitation	Balanced	Balanced	Balanced	Balanced	Balanced	Balanced	Balanced
<b>Section B: Actual Orientation</b>								
Score Exploration	Interm.	Interm.	Interm.	Interm.	Interm.	Interm.	High	Interm.
Score Exploitation	Interm.	Interm.	Interm.	Interm.	Interm.	Interm.	Low	Interm.
Overall Actual Orientation	Balanced	Balanced	Balanced	Balanced	Balanced	Balanced	Exploration	Balanced
<b>Section C: Match / Mismatch between overall perceived and actual orientation</b>								
	Mismatch	Match	Match	Match	Match	Match	Mismatch	Match

#### 4.2 Actual orientation and matching/mismatching

The findings on the second dimension of personal ambidexterity, that is the actual orientation, are reported in section B of Tables 1 and 2. Data show that ten individuals out of sixteen show behaviours that are balanced between exploration and exploitation, while the remaining individuals present a prevailing orientation toward exploration.

However, this balance between the two learning orientations is expressed more by respondents of the Sales units than by those of the R&D units. This could be explained by the fact that since their foundation small-medium enterprises of our sample have distinguished themselves for a significant effort in creative solutions in their products and services generated in the R&D unit. This is embedded in the organizational

culture and continuously nurtured by the founders of the companies. On the other hand, the Sales units could be less influenced by the expectations of the entrepreneurs toward experimenting new activities, and consequently more able to distribute their behaviours accordingly to both exploration and exploitation. Moreover, if we consider the behaviours performed at different hierarchical levels, we find that in four units out of eight managers and assistants of the same unit behave in a different way: while the assistants perform balanced behaviours, the managers are more exploratory than exploitative in their behaviours. The R&D managers and the R&D assistant of Delta represent an exception, since they both show behaviours oriented towards exploration.

Section C of Tables 1 and 2 shows the comparison between the perceived and the actual orientation. Data show that in six cases out of sixteen individuals' perceptions are different from individuals' behaviors. We identified two kind of mismatch: i) in four cases the perceived orientations required by the job is balanced but the individuals behave according to an exploratory learning orientation; ii) in two cases the perceived orientation is toward exploration or exploitation but they behave according to a balanced orientation. The remaining ten cases present a match between the perceived and the actual orientation. Apart the case of Delta R&D unit in which all the perceived orientations and the actual orientations are toward exploration, the individuals show a balanced orientation both in their perceptions and in their behaviors.

If we consider these results according to the business unit perspective, we find some specificities related to the R&D and Sales units. In particular, in the R&D units there are three different situations:

- i. managers that present a mismatch between their perception and their behavior (the first is balanced and the latter is oriented toward exploration) whereas their assistants present a match (both balanced). This is the case of Alpha and Gamma;
- ii. managers and assistants that present a mismatch, even if it is due to different reasons (the managers perceive a balanced orientation and their behaviors are oriented toward exploration, while their assistants show the opposite). This is the case of Beta;
- iii. managers and their assistants present a complete match between the perceptions and their behaviors, that in the case of Delta are both oriented toward exploration.

Considering the Sales departments, there are also three different situations:

- i. managers that present a mismatch between perceived and actual orientation (the first is towards exploitation and the latter is balanced) and their assistants present a match (both balanced). This is the case of Alpha;
- ii. managers that present a mismatch between perceived and actual orientation (the first is balanced and the latter is towards exploration) and their assistants present a match (both balanced). This is the case of Delta;
- iii. managers and assistants present a complete match between perceptions and behaviors. This is the case of Beta and Gamma.

This comparison underlines a significant difference between different units inside the same firm: there are no similarities in terms of learning orientation between R&D and Sales units within the same firm.

If we analyze the hierarchical levels of the respondents, these results highlight that a match between perceptions and behaviors seems to be more frequent in the assistants than in the managers. This means that neither the managers' perceptions nor their effective behaviors seem to influence their assistants' perceptions and behaviors.

The overall conclusions that can be drawn from our findings is that the two dimensions that we propose as components of the personal ambidexterity are distinct and independent. Perceived and actual orientations emerge in various different combinations creating a mismatch at individual level as well as some inconsistencies between different hierarchical levels and between business units. This calls for a more in-depth investigation on the determinants which favor or hamper the matching or the mismatching between the two dimensions of personal ambidexterity.

#### **4.3 Determinants of matching/mismatching between perceptions and behaviors**

The process of identification of the determinants, discussed in the method section, led us to identify four typologies of situations of matching/mismatching between perceptions and behaviors that can be associated to specific causes illustrated in Figure 1.

**FIGURE 1. CAUSES OF MATCH/ MISMATCH BETWEEN PERCEIVED AND ACTUAL ORIENTATION**

<b>Match</b>	<b>SITUATION 1</b> <ul style="list-style-type: none"> <li>• Inter-firms and inter-functional experiences</li> <li>• Commitment toward conciliating multiple requests</li> <li>• Continuous learning approach</li> </ul>	<b>SITUATION 2</b> <ul style="list-style-type: none"> <li>• Cognitive approach, competences and expertise coherent with a specific learning orientation still dominant in the organizational context</li> </ul>
<b>Mismatch</b>	<b>SITUATION 4</b> <ul style="list-style-type: none"> <li>• Inter-firms experiences in different sectors</li> <li>• Continuous learning approach</li> <li>• Awareness to act as a boundary spanner across the company</li> <li>• Autonomy and initiative in deciding how to manage their time</li> </ul>	<b>SITUATION 3</b> <ul style="list-style-type: none"> <li>• Experiences in the same function and primarily in the same company</li> <li>• Personal traits toward a specific learning orientation</li> </ul>
	<b>Actual balanced</b>	<b>Actual not balanced</b>

The *first situation* characterizes individuals who show a match between perceived and actual orientation that are both balanced. The individuals maintain they perceive to be engaged in activities that ascribe the same level of importance to both learning orientations and they behave coherently to this perception. The analysis of the personal factors show they distinguish themselves for inter-firms and inter-functional experiences and the capability to flexibly face different requests coming from their role and interfaces. Prior working experiences helped them to better recognize the expectations sent from the firm reducing the causes of role tensions like ambiguity (unclear information about role expectations) and conflict (incongruity of the different role expectations). Moreover, an inter-functional working experience, in the same or in other firms, can affect the type of knowledge possessed, namely increase the depth of knowledge in a certain field and consequently encourage exploitative activities (Jansen et al., 2006). On the other hand, it can improve the capability of perspective taking (and therefore exploitation), but also increase psychological security which encourages exploratory activities (Un, 2007). In addition, they also characterize themselves for a strong effort toward conciliating multiple requests and a continuous learning approach.

In the *second situation* individuals show a match between perceived and an actual orientation which are not balanced but present a dominance of exploration or exploitation, as in the case of Delta R&D unit. Whereas the firm is striving to promote a balanced orientation between exploration and exploitation, the R&D business manager and his assistant perceive their role and behave according to an exploratory orientation. Until recently, this company has been characterized by a strong focus toward exploration. Specifically in the R&D unit, individuals have been recruited according to criteria like previous working experience in R&D activities, creativity, flexibility, commitment toward the continuous scanning of cutting-edge solutions in the industry. In the past years the firm invested in new roles and activities with the aim of pursuing a more balanced orientation between experimentation and implementation. The process of definition of the new role expectancies, their transmission and correct interpretation had just started and this can explain why the individuals belonging to this unit still felt engaged more in exploratory activities and behave coherently.

The *third situation* characterizes individuals who perceive a balance between exploration and exploitation but their behaviors are dominated by one of the two learning orientations. Specifically, in the analyzed cases, the R&D manager of Alpha, Beta and Gamma as well as the Sales manager of Delta show an actual orientation toward exploration. From the analysis of the personal factors turned out that these individuals matured their working experiences in the same business unit primarily in the same company. They show a cultural approach toward innovation and they are also motivated by a strong achievement motive toward the attainment of challenging results in terms of new creative solutions that overtake the current firm's offer. From the interview emerged that these individuals are aware of the expectancies



transmitted by the companies of conciliating both learning orientations in their role, but they interpret their role differently. Their personal traits (for instance the strong passion for experimentation and discovery) and the long lasting experience in the same organizational context seem to legitimate their behaviors toward exploration and can be the causes of the mismatching between the perceived and the actual orientations.

In the *fourth situation* individuals perceive they felt engaged in activities that encourage one of the two learning orientations (exploration or exploitation) but they show a balanced actual orientation. Specifically, the perceived orientation of the Alpha Sales manager is toward exploitation and of the Beta R&D assistant is toward exploration. The personal factors that characterize the individuals ascribed to this situation are similar to those identified in the first situation: inter-firms experiences in other sectors and continuous learning. Moreover, from the interviews turned out their awareness to act as a boundary spanner across the company. Indeed, over time the individuals enlarge their job adding progressively new tasks that imply a frequent interaction with different units. They are characterized by the capacity of establishing and managing relationships, promoting teamwork and collaboration, conciliating multiple requests. Furthermore, they depicted themselves as person with a high degree of autonomy and initiative in deciding how to use their time when they perform the job. In these cases the mismatching could be ascribed to an inadequate definitions of the role expectancies and transmission to the role holders who perceive to be engaged only in a set of activities promoting exploration or exploitation, when they are able to perform behaviors that achieve the balance between the two orientations.

## 5. CONCLUSIONS AND MANAGERIAL IMPLICATIONS

This study presents two important contributions. First, it provides new insights on the individual dimension of contextual ambidexterity, still underdeveloped in the extant literature. Specifically, we conceptually define and empirically test two dimensions of *personal ambidexterity*: the *perceived* and the *actual* orientations toward exploration and exploitation. Our findings show that, despite a common effort of the sampled firms to spur a balanced orientation across business units and hierarchical levels, the concrete behaviors performed by individuals might not be consistent with their perceptions on the learning orientation requested to them by their job. This result confirms that the components of the personal ambidexterity are distinct and independent, and that the analysis of the perceived orientation needs to be complemented with the observation of the concrete behaviors. Second, this research sheds light on the factors that favor or hamper the matching or the mismatching between the two dimensions of personal ambidexterity. The four situations classified allowed us to identify the personal antecedents that enable the consistency between perceived and actual orientation (matching) and those that explain the mismatching between the two dimensions.

From these findings some managerial implications can be drawn. First, the exclusive analysis of the perceived orientation offers only a partial perspective. Indeed, even if individuals could perceive the learning orientation expected by their firm, at the same time they might not activate consistent behaviors. Firms need to be aware of the complexity of achieving personal ambidexterity and to implement the assessment of both individual perceptions and behaviors. The collection of data on actual orientation can be carried out drawing on direct observations or interview protocols that enable to capture the concrete behaviors performed by individuals in their daily activities and classify them according to the two learning orientations (exploration and exploitation) through content analysis. This paper has also provided a methodology for evaluating and comparing the actual and perceived orientations. Moreover, the analysis of the personal factors of matching/mismatching provides, on the one hand, insights on the individual characteristics that can be promoted in order to nurture ambidextrous roles and, on the other hand, some levers that managers can use to intervene and solve potential tensions in terms of definitions of the role expectancies, their transmissions and interpretation.

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# AN ORGANIZATIONAL TREATISE ON THE GOLDEN AGE OF PIRACY AND IT'S VIRTUAL IMPLICATIONS

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## ABSTRACT

*The aim of this study is analyzing the Golden Age of Piracy and examining its characteristics in order to gain a deeper understanding of organizational reality regarding today's virtual world. In this context, the Golden Age of Piracy and pirate organizations are examined from a historical point of view. The genuine and successful organizing form of piracy in a complex environmental system is a special approach in dealing with the dualistic form of an authoritarian-democratic structure. Furthermore, diversity management in such an organization and the existence of unique organizational contracts enabling the distinctive characteristics of pirate organizations provided a different insight to the organizational reality of today. Hence, it is stated that characteristics of environment in internet show a striking similarity to the Golden Age of Piracy. Despite the limitations of using a historical metaphor in study of organizational reality, study on the Golden Age of Piracy provides a special interpretation to the interesting features of the organizational structures in the virtual age.*

**Keywords:** *The Golden Age of Piracy, Pirate Organization, Organizational Environment, Internet, Virtual Organizations*

## 1. INTRODUCTION

In the field of organizational studies, seemingly business organizations are the main focus with a performative intent. Other than business organizations, there are many analyses of state and non-governmental organizations with a similar perspective. Such analyses are conducted mostly with a functionalist paradigm (Burrell and Morgan, 1979). On the contrast, there are a few numbers of studies of marginal organizations such as mafia (Parker, 2008), pirate organizations (Land, 2007; Parker, 2009a), circuses (Parker, 2011a), cowboys (Parker, 2011b) and heavenly hierarchy (Parker, 2009b). Studies of marginal organizations are criticized as having problems in empirical methodology, or some even challenge them saying that they are esoteric studies (Alvesson, 2008). But it has to be seen that the analyses of marginal organizations provides an understanding of a different model of organizational efficacy. Especially the illegal organizations' efficacy is interesting because when they fail, the result is imminent death of the members (Wallek, 1995). Because of this, marginal organizations are ruled under the iron fist of power, but interestingly this iron fist rule have surprising autonomic touches and radical management approaches in it. Sadly, the managerial processes, rules and applications in these kinds of illegal organizations are not given enough importance in the literature (Leeson, 2007; Parker, 2008). But there is much to learn from the organizing principles of marginal organizations. Marginal organization examinations are not only limited to contemporary organizations. Also the organizations of the past can be examined, so that we can anticipate the future of organizations in order to think and change the open future (Parker, 2010). Furthermore, the analysis of marginal organizations is an enriching experience because they have distinctive structures and they existed at different times. Sometimes an insight gained from past can also give a new understanding of what is to be or what can it be. Studies on metaphors (Cornelissen *et al*, 2008; Morgan, 1980) and studies using historical perspective (Jacques, 2006; Puchala, 2005; Üsdiken & Kieser, 2004) provided a special perspective on understanding of the organizational reality. This study aims to provide an alternative view by using the understanding that is gained from examining a marginal organization; pirate organizations in the Golden Age of Piracy. There have been studies on the subject (Özmen and Çakar, 2006, Land, 2007, Leeson, 2007, Parker, 2009a, Puchala, 2005) but there is a tendency towards a popular understanding of their nature (Morgan, 2005; Snelders, 2005). In this study, the pirate organizations in the Golden Age of Piracy will be analyzed. Their marginal organization characteristics will be the main scope. We won't look at these organizations to see them as a metaphor of today's managerial approaches; we will look at the factors that made them unique. With this intent, we also aim to put contribution to the discussion that took place in this journal by Land (2007) and by Parker (2009a). Acknowledging their arguments, we want to set the direction towards today



and future of the internet as a possible new golden age. That is one of the main contribution that article stands upon, which will be mentioned following the discussion regarding piracy.

Before beginning the examination of the pirate organizations of the Golden Age of Piracy, we also need to explain the ethical positioning of this study. It is impossible to ignore that pirates are bandits that harmed other people intentionally and they did for their self-interests. No matter how romantic they may sound in stories and even in history (Parker, 2009a), pirates are a group of evil individuals forming evil organizations that harmed people. So, this study is different than former studies on the subject due to its ethical positioning as well as there won't be an idealization of their romantic pirate image. Pirates were not a bunch of freedom fighters; they were illegal people who faced a world where sky was the limit. Whatever we attribute to their possible romanticism is tied to conception of today's global but limited world that doesn't offer horizons of new lands to explore. Keeping a vigilant eye on the unethical nature of pirate organizations, this study aims to analyze organizing principles by focusing on the period of Golden Age of Piracy (1650-1730) (Land, 2007:171; Leeson, 2007: 1053). We believe this period is showing some similarities to current reality and provides alternative realities that can provide us insights for the future. During that period there was a significantly unsteady environment where the new frontiers were continuously being discovered. And pirates formed a very effective type of organizing and became an important factor in the entire oceans. They also benefited greatly from the power plays between the great powers of that time. Golden Age of Piracy deserves to be analyzed, due to the unique organizational achievements that were performed in a complex and interesting environment.

Ever since the early periods of history, there had been piracy activities in the Indian Ocean and Mediterranean Sea (Federzoni, 1936, Puchala, 2005: 3-4) Due to their actions' local characteristics and limitedness of the activity space that piracy activities will not be analyzed in this study. Pirates during the period of golden age between the years 1650-1730 formed new organizing structures in an environment where the borders were expanding in every direction. Piracy activities which took place in other periods did not occur in such a chaotic environment. Golden Age piracy has spread from Caribbean, Latin America to Africa, oceans of the world became infested with the pirate activity (Smith, 1996: 30). It spread so far that some parts of the *terra incognita* was covered by pirates. This unique nature of the period makes the analysis of pirate organizations of the golden age invaluable for a fresh look at today's organizational reality in the world of internet. In order to avoid subjective evaluation, we will concentrate more on the events of the period and environmental conditions. For all these purposes, we shall begin this marginal organization study by defining the "pirate".

## 2. WHO IS A PIRATE?

Piracy is defined as "an act of robbery on the high seas", and pirate is defined as the "one who commits or practices piracy" (Merriam-Webster, 2011). The dictionary of the pirates (Rogozinski, 1997) defines the pirate as a seaman robbing the other seamen. The challenging part of pirate identity is their function in their ships and the pirate ships or even small armadas consisting of pirate ships. Because the organization skills needed for such an endeavor is beyond a definition of a simple robber. Pirate ships consisted of deviant members of the society that had a tendency of using criminal ways to acquire their needs and wants. And these organizations consisting of deviant individuals were aiming to survive and prosper by preying on the ships of anyone they can rob.

In addition to this basic and functional definition of the pirate, there is also a popular image of pirates in the common psyche of the people. In this study, we tried to reach a clearer and more historically accurate pirate persona, by ignoring the popular cultural pirate image as much as possible. The pirate image in the western literature is created by romantic imaginations of the authors. At first they were a symbol of adventure, and people were so curious about them. Their stories got exaggerated by the attention of the people. But as time passed further into the industrial age, they began to be seen as part of romantic relic of the past, and people began to look at them with more sympathy (Parker, 2009a). Popular culture has created a pirate reality which was actually different than the reality.

This can also be seen in the studies that are affected by the popular culture image of the pirates. These studies consider piracy out of its own context and the characteristics of the Golden Age of Piracy. In these



studies, pirate is mentioned as an ideal figure or as a hero and the pirate reality is re-shaped for the sake of managerial approaches marketed by the authors (e.g. Morgan, 2005). There are also studies that are taking pirates as part of a critical approach to the present zeitgeist. These studies are conducted connecting the golden age to present and idealizing the organizing forms of the pirates whilst suggesting an alternative and radical organizing model (Land, 2007; Snelders, 2005). For instance, Rediker (2004) mentioned pirates as democrats of the open seas (McLynn, 2004). Pirates are represented as liberal minded, collective, anti-authoritarian, egalitarian public heroes (Pritchard, 2005). In such studies pirates are idealized. Such an approach has unrealistic characteristics as well as it is against the ethical positioning of this study. We have to emphasize the main characteristics of the pirates - they were a bunch of criminals who robbed people, and didn't hesitate to kill if they had to, or even in many cases because they liked to do so. In order to reach a less romantic but more realistic image of the pirates, we need to assess the environmental conditions of the period.

## **2.1 Organizational Environment in The Golden Age Of Piracy**

Ever since the beginning of the marine activity, piracy activities have been seen. Mediterranean piracy of the ancient times, piracy activities in the Indian Ocean and Pacific Ocean, Mediterranean pirates of the Ottoman times are good examples of these. So, it will be better to mention the idiosyncratic characteristics of the organizational environment of the Golden Age of Piracy. When we look at the period called the golden age of the piracy (1650-1730), we see a new group of pirate organizations began to be form in the brave new world of exploration and conquest. This world's main focus was the colonial domination of the globe, firstly centered on the sphere of Latin America and Africa then its reach has widened beyond the known horizons. In this period the transfer of resources from America to Europe was in a considerable amount. And this activities were not done by a monolithic structure of colonial power, there was many great powers struggling with each other in order to control more colonial field. So piracy emerged as a different organizing model that fills in the every gap it can find in this system. At that time, while the Portuguese and the Spanish impact colonial powers were slowly dwindling, the English, the Dutch and the French were struggling to increase their powers in the oceans (Braudel, 1982; Brummet *et al*, 2000; Kennedy, 2001; Lunsford, 2005). The diversity in the characteristics of great powers and the struggles among them were creating opportunities for pirates to flourish. Portuguese and Spanish was trying to protect their position against aggressive expansion of the British, the Dutch and the French.

Many alliances and deals were done in the process, and these activities were increasing the environmental complexity drastically. Furthermore, the possibility of rapid changes among these alliances and hostilities between them were raising the environmental dynamism. In such a complex environment, there was a great marine transfer of considerable amount of resources from the recently discovered lands or new colonies. This transfer served as a breeding ground for pirate organizations. Environmental richness of the situation was feeding the piracy activities to the extent that was never seen before in history. In such a context, there was little distinction among merchant ships, military ships and pirates as in many cases merchant ships and military ships have committed piracy when they found a chance.

With an organizational perspective, we can see that ostensible limitless boundaries of the environment have great effect on pirate activities. This organizational environment covered a variety of places from Atlantic Ocean to Indian Ocean, such as Port Royal in Jamaica, Tortuga (Haiti and Dominic Republic today) or Madagascar (Little, 2005: 77). In this big geography, pirates were not only plundering the wealth of the victims, they were also selling victims as slaves or getting ransom for them (Puchala, 2005: 3). The wide scope of the activities in such an environment caused pirates to be sucked into the power plays of great powers for the domination of the specific regions and the trade routes.

In this period of struggle, pirate organizations were showing considerable adaptation skills. Their flexible organizing style made pirate communities the basic organizational structure of the period. Golden age pirate organizations were so effective that between the years of 1655-1680 countless villages and twenty-two larger towns were plundered while they robbed hundreds of trade ships (Rogozinski, 1997). When we look at the development process of pirate organizing we also see the main principles of population ecology theory. According to population ecology theory, environment has an effect on organizational communities or on an organizational form rather than an individual organization. Adaptation of the organizational community to its environment depends upon its meeting the expectations or filling the gap

of the environment and fitting of the organizational community or organizational form to its environment. This situation is called the rationality of natural selection (Hannan and Freeman, 1977). It is claimed that the selection is realized with the environmental pressures, meaning that as long as the organizational community fits the environmental requirements selection occurs. It is assumed that more effective organizational communities have much more survival rate than the less effective ones. Furthermore, the organizational community may maintain its survival on the basis of the resources provided by the environment and how these resources are used by the community (Aldrich, 1979). Additionally, for the existence of an organizational community there should not be any barriers among the members' interaction with each other whilst members are being exposed to the same institutional effects.

The golden age of the piracy is a perfect match to show all these selection processes explained in the theory. The global political lacuna where the piracy grew was a fertile ground for such a fit between the organizational community and the environment. Hence, especially in the earlier period of this lacuna, a boom in pirate organizations was observed. In the dependent resource pool, especially the high amount of richness of the recently discovered lands transferred by Portugal and Spain was a reinforcing motivator of the organizational activity. In this context, many pirate communities were being formed and they were being effective in the open seas with the management of the successful captains and therefore growing. Capturing of nearly four hundred ships by the notorious pirate Black Bart is a noteworthy example for the effectiveness of such an organizations (Cordingly, 1996: 141). Pirates acting in the less successful pirate organizations were either killed by the navy or they entered more successful pirate organizations. During that period, change was incredibly rapid in the sense of organizing. The change in the environmental factors had a direct impact on the pirates. This situation might be considered as a cyclic process. As long as the sovereign powers are felt the piracy was getting less and when the sovereign powers could not reach any region, pirate organizations immediately began benefiting from the gaps (Puchala, 2005: 2). This cyclic process might be considered also as the dialectic of the order and the chaos; so long as there was a power for the order the environmental complexity was low, and as soon as there was a gap, chaotic forces accelerates environmental complexity to its limits.

Again in the scope of this cyclic process, the Golden Age of Piracy ended primarily owing to renovation of the navy and the standing army with the support of technological changes in Britain. These improvements were directly affected by the rise of economic powers at the dawn of industrial age. Beginning with the mid 18<sup>th</sup> century, particularly Britain became a sovereign power in the open seas against pirates as pirates had been a threat for the economic power of the British. In addition to effect of industrial revolution and the superior power of the British navy, colonies beginning to get settled and their becoming more than a wild frontier enabled the change in the situation (Puchala, 2005; Smith, 1996). In the following period, even though the piracy was continued, it became a marginal activity performed by the limited amount of criminals (Sherry, 2008: 355). The changing organizational environment made golden age pirate organization style impossible. Although piracy was maintained in different places and at different times, it has never been as effective as in the Golden Age of Piracy.

Golden age pirates had a very intense organizational interaction that made them much different than the other periods, because they could have organizational interaction that could happen regardless of the width of their environments. When the crews of the pirate ships were analyzed, it is seen remarkably in the trial documents that many pirates were also formerly active in the other pirate communities (Cordingly, 1996: 364-281). Crews from the different pirate communities were coming together in several ports such as Bahamas or Port Royal. These ports had been a meeting place for the pirates for a long time. That made the information exchange among them possible. This information traffic among pirates having origins from different regions and beliefs was possible due to the similarities of the pirates' managing rules and in-group agreements. The black flags were embraced with personal differences by the pirates. And it is certain that the common characteristics of the laws of the captains and formation of the fleets for chasing large amounts of booties couldn't be possible without such an interaction.

In this period, there were some main meeting points for the pirates. Tortuga (Haiti and Dominic today), Nassau (Bahamas today) and some parts of Madagascar were considered as the towns of the pirates (Parker, 2009a: 177; Smith, 1996: 33). Such towns were havens for the pirates and in addition to supplying, the maintenance and the repair of the ships were done in these places. Besides; these

harborages were suitable for recruitment for the crew, gaining recent information, hiding from their pursuers and most importantly they offered an opportunity for selling and exchanging plundered goods (Puchala, 2005: 6-7). These towns were shared by many different pirate communities, and some of the leading pirates were forming cartels by making deals on the rights of these towns (Smith, 1996: 33). Considering all these interactions, it can be stated that piracy represented a complex system that many agents were involved to the process (Puchala, 2005: 7). Whilst pirates were plundering for themselves, actually, they were getting diverse agents (e.g. trader at the port, smuggler, inn owners, local administrators conniving of the pirates, monarchy getting his share) into an economic cycle (Parker, 2009a: 168). The lacuna in the organizational environment also supported that economical structure of the piracy (Smith, 1996). Great powers of the period had also spectacular effect on this pirate economic system with the usage of "privateer" authorization. At this point, the explanation of privateer concept is crucial for gaining a deeper understanding of the complexity of this system.

Privateer was a pirate who was given a privateer license that gave him right to do piracy on behalf of the state. With this license attacking an enemy nation's ships and plundering them, wasn't seen as illegal. More interestingly, a part of the booty had to be saved for the state. Unless the state approved, the pirates could not get their share of the booty. State wasn't only enabling pirate activity, it was benefiting from this activity by all possible means. It can be stated that pirates who had privateer license made a significant level of plundering and became an important element among the naval activities of the European states. Hence, many captains might be privateers of separate powers by changing multiple sides (Little, 2005: 17). After the golden age of the piracy, privateer activities were professionally maintained by the seamen whom many of them were not pirates (Konstam, 2001). It is seen that the British were protecting and supporting the pirates by giving privateer licenses for decreasing the Spanish power in the Golden Age of Piracy.

As you can see above there was a great deal of complexity in the environment and political ambiguities directly affected pirates. The dynamic and unique structure of the pirate organizations in the time of Golden Age of Piracy was a natural result of these complex environmental forces. Now we have to see these pirate organizations in depth to understand the uniqueness of their structures.

## **2.2 Pirate Organizations**

In order to cover pirate organizing, it is crucial to mention what kind of characteristics pirates have and what sort of values they believe in. The roots of such factors are related to the maritime customs of that period. Even though the elements of these customs became radicalized or marginalized, they did not lose their influential origins. Considering the period of the study, the seaman culture of the time belonged to the men that mostly began working at ships from his early youth till he was either dead or incapable to do sailor tasks. Therefore, seamanship was considered as a sort of craftsmanship learned in time. In order to maintain that craftsmanship the men needed to be away from the land for months or even for years. Therefore, seamen developed a culture strictly tied to each other in their own seamen community. Their intimate and close relationship on the sea was considered much more superior than the one on the land. It was a sort of brotherhood since in a ship a man could have many difficulties and everybody needed each other in order to cope with these difficulties (Rogozinski, 1997). Accordingly, the people on land were perceived as totally different group of people that for many times they were seen as simple folk or lowly peasants by the seamen due to this separation of the land and the sea.

As seamen were distinguished by the nature of their sea life from the land dwellers, pirates were also distinguished dramatically by their criminal intent compared to the ordinary seamen. Piracy meant to risk their lives by choosing a criminal life on purpose. They chose piracy to escape tough work conditions of the time (Smith, 1996). The pressure created by the very hard working conditions in the trade ships and especially in the navies at that time derives as a substantial factor. Either in the navy or in the trade ships the wages were considerably low, even when it was paid it was given as debit / balance. The death was the continuous danger at any time at anywhere for an ordinary seaman, such that after an ordinary expedition the amount of the people coming back might be considerably low. For instance, at the slave trade ships the one-fourth of the seamen could not come back after an expedition (Land, 2007: 174; Leeson, 2007: 1059). This situation was worse in the navies. Due to difficulty of the conditions the criminals were forced to work, even sometimes people were kidnapped to make them crew in the navies.

In such tough circumstances, captain of the ship and the officers were living in separate conditions as the masters of the crew and controlling them with the whips. In addition to these; many reasons made employment conditions unacceptable such as the limited food given, scorbutic disease, easily spread of contagious illnesses due to crowded and narrow working and living spaces. Many members of the crew, as they were stuck in open seas and having had not possibility to escape, had a rebellion mood keeping their hate against not only to the captain and his authority, but also to any kind of authority (Sherry, 2008: 51). In such a context, a seaman became a pirate in three ways;

1. By rebelling against the captain and then by getting control whilst working in a ship as a seaman.
2. By joining to the pirates voluntarily as a seaman having worked in a seized ship.
3. By joining to the ships at the pirate ports and towns.

In case of being a pirate, the gains from a plunder was astronomically higher than amount than the lawful gains of an ordinary seaman. Pirates might earn nearly a hundred times of the annual wage of an ordinary crew with just one plunder (Leeson, 2007: 1077-1078). The pirates were paying the price for such a high income by breaking themselves off the social life. Whilst the other seamen's ships could visit or stop over other ports, the pirate ships could go to just allowed ports, hence the only communication with the normal life was via the battles. Otherwise, they were caught and executed immediately. That situation forced the pirates to be introverted as a community and closed to the social environment. Thus, people out of the pirate ships were seen as "others" by the pirates and that situation caused pirates to see them totally different. It was resulting in a tendency to commit any kind of evil to these people without any hesitation.

Despite its criminal tendencies, piracy had a kind of anarchic philosophy; it was based on being against any kind of factors forming the prevailing dominant structure and understanding. Against the hierarchy, against the moral understanding and against the policies of the sovereign states criminals created an order for themselves with their way of living. Even when they withhold their ways with things like privateer contracts, they were all just a matter of opportunist steps; the basic nature of pirate activity was not changed. It is clearly seen that this alternative structure had democratic way of organizing in the limits of their circumstances. Hierarchical layers were nearly none, there was no class difference between the crew and the captain as well as the captain might change sometimes in a bloody way in case the crew was dissatisfied due to failures. Besides, the majority of the crew had the potential to handle nearly any kind of tasks except some very special ones. By giving a sort of judicial power to quartermaster a portion of the power of the captain was lessened. Furthermore, maritime lieutenant or midshipman positions were not respected or regarded. Yet, in pirate ships men were chosen for the usual tasks that were normally made by warrant and petty officer in the navy or trade ships, meaning there were also functional positions such as boatswain, artilleryman, carpenter and cook (Cordingly, 1996: 129).

As pirate crews were against the harsh discipline of that time, they either wanted to join an able captain's crew, or they were electing their captain on the basis of his talents. Except some of the tasks dependent on specialization, there was an egalitarian understanding of task division, and even on the sea these people might overthrow a captain for a new one (Rogozinski, 1997). Captain had absolute power only in times of fighting, chasing or being chased; in all other times and over the issues concerning the crew, the majority of the crew had control. In terms of organizational thought, these aspects demonstrate how the pirates had organic and flexible structure.

On the other hand, as the captains of the pirate ships came to the power by passing many competitive and tough processes, they were capable of being strongly authoritarian when they have seen the need. That was making pirate organization much more complex. We see a criminal organization having some faces of democracy depending on rejection of order at one hand, and the same criminal organization could allow full authority to captain at the other hand. All these variations could be possible because of their opportunistic aim of plundering more wealth. Particularly, as mentioned above, in the chase for booty or in war, the authority of the captain was complete and without a question. But, according to the consequences of the events, captain might lose his position so suddenly and mostly pays this change with his own life. The pirates were acting entirely like a wolf-pack. As long as the dominant individual had the power, there was full obedience, and otherwise in the sign of his weakness this person might not even live. It was impossible to have such a perspective in the navy of that time, as they had a well defined rank



and file structure. Such a criminal structuring was completely opposite to militaristic view of that time, because the naval structure depended on the characteristics of autocracy, full loyalty to the admiral and obedience to commands as a principle. In the merchant ships, even if the captain didn't have the full death and life powers like the navy captains, the authority of the captain was absolute, any kind of challenge to authority was impossible to think of. In order to redefine the rules of the game in such a time of chaos and turmoil, pirates formed their own way to deal with the dualistic nature of their democratic and authoritarian structure. Pirate organizations formed their own organizational contracts for this purpose.

### **2.3 The Organizational Contracts of the Pirates**

Due to their chaotic life styles and their intention to commit a crime, pirate life can be seen as a good example of anomalous life without a future. But when we examine the Golden Age of Piracy, we see that pirate ships were directed with some fundamental principles. These rules were developed to limit the authority of the elected captains, to control and restrict the powers of the quartermaster (Leeson, 2007). These rules were followed like holy commandments and it has bounded everybody in the ships. The crew acted as an authoritarian and decision-making council in the beginning of a journey or when a new captain is elected (Smith, 1996). This council determines a set of articles that have to be signed by each person. These articles reveal how the booty is delivered, compensation amount to be paid to injuries after fights, rules of the ship life (not to be drunk at fight, not to rape woman prisoners, not to bring woman to the ship, and etc.) and the punishments if the rules are broken. Although the existence of a council might seem as a democratic characteristic, suggestions of leaving personally or dissolving the pirate community were considered as fatal offenses (Little, 2005: 38). Whilst the articles might seem dissimilar from ship to ship, as a result of the interaction between pirates, the fundamental approaches and their main structures were alike. Rules followed in a ship of a specific captain could be adapted by other captains, and in time some common rules were widely seen in organizational contracts of pirate organizations. Among these rules, the ones belonging to Black Bart (Barthelomeow Roberts) (Cordingly, 1996: 130-131) are a good representation of the rules of that period;

1. All the important decisions will be given by voting.
2. The person who is stealing from the ship will be marooned.
3. All the weapons and the swords will be kept clean.
4. No women will be on board.
5. The ones escaping the ship in the fight will be killed.
6. All the quarrels of the crew will be resolved on land.
7. The booty will be shared as two shares for the captain and the head of the crew, one and a half shares for the head of the armorer and the boatswain, a quarter shares for the officers and a share for the crew.
8. Injuries will be compensated; for the ones who lose arm or leg will get additional booty share regarding the severe of the injury.

After signing such a contract a seaman was considered immediately as a pirate (Land, 2007: 179). These rules helped removing the causes for the failure as well as successful performing of the organization, improving efficiency, preventing cheating and having a fair and just system. Even among some of the rules there were rules about gaining a higher share dependent on individual performance. Particularly, a pirate who demonstrated an outstanding behavior or a significant courage in a fight might be paid more (Leeson, 2007: 1074). Besides, such an additional share given for the injured ones provided a sort of primitive social security.

On the other hand, bandits making the rules exhibit the peculiar practical nature of these rules. As shown above, while there are classical rules regarding the conditions of the weapon or stealing, there were futuristic rules based on decision-making by voting, the order in the share system or even additional share for the injured ones. Though there might be differences among the pirate captains, with the mutual interactions of the pirates the practiced rules resembled each other. The physical punishments applied in the navy or trade ships were not included, however they might be given if there is a common decision by the pirate crew. Whilst there were death sentences, the lack of physical punishments as a discipline penalty was a noteworthy expression of the reaction to the prevailing order. Being incapable of going to places where pirates are not welcomed and being executed immediately if caught made pirate



organization radicalized. And it reinforced the dictum of piracy rules and pirate life style over the pirates (Cordingly, 1996).

The power of the contract has one more interesting aspect since pirate organizational contract was managing to bind a group of criminals with various diverse origins to a complex and illegal organization. In the pirate ship piracy was the only common ground as there might exist British, French, and Dutch people; a range of hunters and smugglers from the Caribbean; Spanish fugitives; African runaway slaves; Native Americans and even in some extreme cases women who normally not accepted in the ships at that time. Such diverse origins and backgrounds of seamen in the pirate ships exhibit a striking point in the name of diversity management with an organizational perspective. Diversity management (Cox, 1994) was concentrated on managing of differences of the organization members in an efficient way. But for pirates, it was a natural factor at that time. People who could not even speak the same language and having dissimilar cultures were easily coming together in a pirate organization. Because, they required such a structure in order to reach their aim of plunder and richness.

The gathering of pirates was not just inside the pirate organization, but also different pirate organizations did come together. For instance, when it is heard Henry Morgan was going to plunder Panama, many other pirates joined him and in the end, thirty-three ships and two thousand of people attacked to Panama. This attack caused great deal of harm to town and its inhabitants. Such co-operations among the pirates show their common aims are much more important than the differences they carry. However, not meeting the expectations of the pirates regarding the plunder caused serious conflicts aftermath. After Panama, the pirates had such conflict among themselves. But it is important to know that as long as there is a common goal, pirate organizations can be formed into a super-structure of pirate group.

### 3. THE GOLDEN AGE OF PIRACY IN THE VIRTUAL WORLD

When we look at the present, the rise of the piracy activities is observed at significant level of affecting international trade on seas. Serious amount of the piracy activity is felt especially around Somali and East Asia. Even though the piracy around the Southeast Asia region (Young & Valencia, 2003) is not observed as much as in the Somali region, prolonging of the piracy draws attention according to the statistics (Bradford, 2007: 190-191; ICC International Maritime Bureau, 2009). Even it is stated that Somalia might be considered as Tortuga of the 21<sup>st</sup> century (Angeloni, 2009). At the end of 2011, pirates were active again, and the actual figures for the year 2011 were as follows;

**Table 1: WORLDWIDE PIRACY INCIDENTS IN 2011**

Total Attacks Worldwide	421
Total Hijackings Worldwide	42
Incidents Reported for Somalia	
Total Incidents	231
Total Hijackings	26
Total Hostages	450
Total Killed	15
Current vessels held by Somali pirates	
Vessels	10
Hostages	172

**Source:** International Chamber of Commerce Commercial Crime Services, 2011

Both in the land and on the sea the restraining of the pirates are not easy, hence, they can easily get the control of the ships and make negotiations for the ransom. These pirates, significantly distinctive from the ones in the golden age, are using high technology, moving very quick with the fast boats, gaining income mostly via ransoms and not forming a radical social cohesive group living and moving altogether as the pirates in the golden age (Puchala, 2005).

Even the density of the piracy activities might seem increasing today, considering that situation as a new Golden Age of Piracy would be an illusion. In a circumstance where the environmental conditions are clarified, today's pirates are formed by moving of the criminals from land to sea, therefore they are noticeably different than the pirates of the golden age. Pirates of the golden age created an idiosyncratic

sea life under the shades of the great powers in a period when the borders of the world are not known definitely. Today, the similar conditions of the golden age of the piracy appear in a very different environment apart from the open seas. Internet is providing a new environment whose boundaries are not known, and there are now different great powers such as states and corporations willing to have much more control on this new frontier. For this control, organizations get formed in the internet both for legal and illegal purposes. Their organization styles are generally different than what we have known about organizing. These special times and characteristics have close resemblances to the golden age of the piracy.

Simply internet means “web of the webs” and represents a world where the computers are connected to each other via multiple networks in the entire planet. In the limitless world of the internet there is space for any kind of actor either public institutions, or private companies or free individuals. As in the beginning of the golden age, the technical infrastructure provided by the United States of America, one of the great powers of today, presents new borders to be opened. With the development of new environmental conditions, in the relatively borderless context that we face, there are countless opportunities for new initiatives.

The context is even more ambiguous than the golden age with its various aspects, because, several undefined activity is growing and along with that it is required to determine whether these activities are crime or not. The states are issuing and implementing new laws. However, since there is not an enabled power that might control the present lacuna, internet expands to a limitless field. Netizens acting organized in internet are not affected by the organizational constraints in classical sense. This prevents such activities to become a serious problem. Even though many countries are trying to implement arrangements for prohibiting access to web sites and internet, alternative practicalities are created immediately in order to overcome those arrangements. For each prevention measure there are hundreds of new approaches to bypass them. Furthermore, controlling becomes much more harder due to the very rapid processing and delivering of the electronic data by the computers; connecting of people from various places such as universities, libraries, homes, workplaces; reproduction and download of the materials having intellectual property rights without losing any quality (Hinduja, 2008: 391, Mason, 2008).

Briefly, the entire world is connected to each other, and even though there might seem legal regulations exist, any kind of legal and illegal activity can be achieved via internet in the frame of these principles (Cisler 2006; Cooper and Harrison, 2001; Mason, 2008). Via the internet, companies can make several transactions primarily the financial ones, buy and sell any sort of product and service legally or illegally and digitally servable products might be downloaded and shared directly. Wide range of crimes is committed worldwide via the internet (Grabosky, 2007); a synergy comes into existence between the organized crime and the internet (Ksethri, 2005). It is assumed that such internet based crime actions will grow up with the spread of the internet all around the world (Denning, 2001). All these demonstrate how the internet cannot be controlled. Therefore, it is still a serious discussion point what kind of a control mechanism will be administered in the internet (Gigch, 2000). Yet, it is very obvious that many classical crime organizations change into a new form through the internet.

People are challenging the companies, the states and even the international organizations whilst making actions against them over internet (Furnell and Warren, 1999; Klein, 2000; Tormey, 2004). Having separate motivations Internet pirates (hackers) also make several various actions by benefiting from the limitlessness of the internet. Generally termed as hackers while some of these people owing to their curiosity target to crack passwords, some of them have the motivation of giving harm to the environment and some others develop new ways of robbing or stealing. However, among these people there is also a special group who might work with some legal institutions and help to the police. Among the aims of these people are to follow the illegal hackers and to bring those to the courts (Barber, 2001). In a very similar vein, a range of anti-virus software firms or companies producing operating systems employ former hackers. Hence, they can control the reliability and safety of the produced software or systems (Roberts and Webber, 2002). Since these hackers, who previously being in different actions in the internet and seem independent, are competent of internet and software technologies, they are used by both the companies and the states with the aim of having and providing safety. This might be considered as one of the reflection of the privateer institution to the present day. In such an environment where the borders are

unknown and the control is impossible the former pirate hackers become privateers for the companies and for the states in order to overcome the ambiguity. In some circumstances the aim of the actions of the hackers might be to have a position as a privateer. Furthermore, hackers communicate, share files and information via virtual communities in such a world where the borders are not drawn, even they might have a special hierarchical structure among them (Cooper and Harrison, 2001). Today, in the uncontrollable environment of the internet the political hackers are also growing in order to benefit from the chaotic structure of the internet. For instance, there is a hackers group called anonymous making actions (hacktivism) against the governments, corporations or even the NATO in order to protest censorship, the bans on internet and support some other social campaigns such as "occupy Wall Street". (The Guardian, 2012; The New York Times, 2010).

Even though criminal activity in the virtual world and bad intentioned hackers are acting unethically, there is also a shady border between legality and illegality of virtual environment. Many new concepts became subjects of ethical dilemmas and ethical debates as in the anonymous group. But one thing is for sure; the organizational structures of today can benefit from learning about past. After the time of internet boom, there was a big interest in the virtual reality. And it didn't take long to create studies on the virtual organizations and its effects (Ahuja & Carley, 1999; Hughes *et al*, 2001; Kotorov, 2001; Moshowitz, 1997). But the main problem in the study of the virtual organizations is due to their being examined as organizations with a new technology. This has caused a reductionist approach in understanding of the virtual organizations. Virtual organization challenge is not just a challenge in upgrading the technology. Virtuality in the organizational reality is bringing a new and complicated paradigm, that can't be understood only by trying to see the reality on the surface. In the early periods of internet boom, it seemed like a matter of organizations adapting to the new magical technology, which was called internet. As time passed, internet seemed like losing its shiny appearance. But despite the loss of shiny appearance, internet began to penetrate the lives of the people deeper. It became part of the social and organizational reality so fast. Hence, in today's world, there are virtual organizations that are organized all around the globe. But it also turns out that, conventional organizations are slowly evolving towards the new virtual structures of today, communications systems, structures of the organizations are inside a state of dynamic change.

Organizations of today are in a struggle for survival in the complicated environment of today. Super powers of today have gone beyond a mere definition of states. The infrastructures of the internet began at the hands of a state like United States and still many states like China, Iran and North Korea are trying real hard to control the flow and interaction in the virtual world. There is a struggle for sovereignty in the virtual world (Ludlow, 2001). But are these superpowers really the sovereigns of the virtual domain? Sociologically and politically it may be a long debate, but according to the organizational perspective, debate is considerably short. The superpowers of the world for the businesses are the multinational corporations who are each day evolving, growing and increasing in power. The boundaries of the new world are for the new reality of these multinational corporations. In this time of a brave new world for a corporate existence, organizations are trying to cope with the change of the times. They are still managing to hold on because boundaries are new and it provides many gaps as it had provided to the pirates of the past ages. Virtual organizations of today are nowadays benefiting from the new boundaries, smaller organizations gain surprising successes; it is a golden age of virtually moving new breed of organizations that can only be compared to the pirate organizations of the Golden Age of Piracy. These organizations are generally composed of the people that are also beyond the conventional definitions. But we have to learn more about their existence, a mere extrapolation of the organizational reality of the current is not enough. We have to learn about the entropic powers of their organizational environment more, because they might become a bright shiny dream of the past and they can be removed by the colossal structures of the multinational corporations. Another alternative would be the legitimization of capitalism with this new technology discourse based on internet for the sake and future of the same multinational corporations (Fisher, 2010). Yet, this study is not aiming to act as a doomsayer of the future, we are well aware of the limitations of the metaphorical evaluation of the reality. Yet, we are just trying to provide a different tool in examining the organizational reality of today.

As a reality of today, in this limitless environment we might also consider social media. Especially with the development of social media, the understanding of online and virtual organization has evolved, developed

and changed (Fuchs, 2010a). Currently, millions of people are using social media and communicating with each other. Such a virtual organization is totally different than the discussions realized in the 1990s. Based on free labor (Terranova, 2000) or immaterial labor (Cote & Pybus, 2007), social media depends upon its consumer-producers. Perhaps that is why the giant corporations are interested in such social media initiatives, putting less but getting more. However, the same social media is one of the triggers behind the Arab Spring which is also a demonstration of a chaotic environment. Hence, internet comes with unthinkable and unimagined alternatives with a gift economy (Barbrook, 2003) and with alternative media (Fuchs, 2010b) so that a new area where the struggles of power, control and resistance arise. As there are multinationals or states trying to control everything on it, there are alternative organizations rejecting the obedience and making claims for freedom. It is very unlikely to make any kind of prediction regarding the future of internet as which sovereign will dominate the field is totally unknown. The future with full of opportunities might not be dystopian, however, as golden age exhibits there might be other possibilities that we can learn from the past to change the future.

#### 4. CONCLUSION

Golden Age of Piracy contains a wide range of elements and variables in which the borders cannot be drawn and the laws cannot be determined. Study of the Golden Age of Piracy has a chance of providing unique interpretations on the different and complex organizing structures of today. We need such different approaches, because the traditional approaches of organization theory have problems in interpreting the organizational reality of today. Structures in the virtual environment create challenges that are pushing the well known and accepted approaches of fundamental organizing principles. Organizational structures prescribing flexibility, short-term partnership, networking and information sharing seem effective in this unlimited and uncontrollable environment for the moment. Analyzing the Golden Age of the Piracy is beneficial in terms of exhibiting how such divergent organizing structures interact with each other in similar ambiguous environments. Today, owing to technological advancements a high level of ambiguity pervades in terms of environment. In the following times, we will be observing an increase in uncertainty in the environment. It is not clear what internet as an organizational environment will transform into, either to a platform for all voices with a participative democracy or to a platform where multinationals and states will control and exploit the limitlessness. Further studies on the Golden Age of Piracy should be concentrated on more specific sectors and alternative worlds in order to benefit more from such a rich historical metaphor of organizational reality.

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# A RESEARCH FRAMEWORK ON KNOWLEDGE SHARING BETWEEN INPATRIATES AND HQ STAFF

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## ABSTRACT

*A major source for multinational enterprises to obtain sustainable competitive advantage in the global market is to access and combine knowledge residing in different organizational units and across national borders. Assigning inpatriate managers from foreign subsidiaries to corporate HQ represents an important tool to transfer subsidiary knowledge to the parent company and vice versa, upon relocation. As there is a paucity of research on the actors in and the antecedents of knowledge sharing processes, we conducted ten focus group interviews with either groups of inpatriates or groups of their colleagues at HQ to identify determinants of knowledge sharing between them. Based on the results gained, we developed a research framework on knowledge sharing taking into account important drivers of the willingness and competence to disseminate and to adopt knowledge that address organizational, individual as well as relational-level factors. The objective of our paper is to introduce the model derived from the results gained in the focus group interviews and draft hypotheses to encourage further research in this area.*

**Keywords:** *inpatriates, knowledge sharing at the individual level, knowledge sharing in MNEs*

## 1. INTRODUCTION

The importance of knowledge sharing for the success of multinational enterprises (MNEs) has long been recognized in corporate practice (Argote & Ingram, 2000): MNEs increasingly need to mobilize and integrate knowledge from multiple locations and individuals at home and abroad (Kogut & Zander, 1993). They can develop knowledge in one unit, transfer it across other units of the MNE located in other countries, and exploit it outside the unit respectively country of origin. The important role of knowledge transfer as a key organizational resource has triggered considerable research on knowledge transfer within the MNE (e.g. Gupta & Govindarajan, 2000; Kogut & Zander, 1993; Minbaeva, 2007; Szulanski, 1996). Yet, there are areas that require more detailed considerations: Thus, only a few studies examined the role of inpatriates in knowledge sharing (Reiche, 2006; 2007). Inpatriates are host country employees of foreign subsidiaries relocated to the HQ on a temporary basis. Amongst others they provide their colleagues at HQ with their specific and often tacit knowledge about business operations, markets, and culture in their countries of origin. They often act as 'linking pins' between their home subsidiary and HQ staff (Harvey, Reiche & Moeller, 2011). Enhancing continuous knowledge sharing thus is an import aspect of the inpatriate assignment (Moeller, Harvey & Williams, 2010). To deepen our understanding in this field, we examine processes of knowledge sharing between inpatriates and HQ staff: What kinds of knowledge do they share and how? How successful do they share knowledge? And what characteristics of the actors and the MNE context promote or hinder knowledge sharing? To answer these questions, we conducted ten focus group interviews with either groups of inpatriates or groups of their local colleagues at HQ. From the results gained we developed a framework which we introduce in this paper. In addressing inpatriates' role in knowledge sharing, we contribute to the knowledge management literature in regard to extending our knowledge relating to the individual level of analysis, i.e. knowledge sharing from person to person. Further, while many researchers focus on knowledge transfer from the HQ to subsidiaries, we explicitly include knowledge transfers from subsidiaries to HQ in our considerations. The reminder of this chapter is as follows: First, we examine the theoretical framework of our research. We then briefly outline our methodology and sample. The introduction of our research model together with a detailed description of our results and research propositions follows. We finish with concluding remarks.

## 2. KNOWLEDGE SHARING IN MNEs: CONSIDERING THE ROLE OF INPATRIATES

MNE success – from the perspective of knowledge-based corporate governance (Foss, 2007) – relies upon the multi-directional knowledge exchange between organizational units, which are scattered across several geographic regions. Nonetheless, our understanding of knowledge sharing in MNEs and the

underlying promoting or hindering conditions remains sketchy and speculative (Inkpen, 2008). While inpatriate assignments represent an important channel for the flow of subsidiary knowledge to the HQ and vice versa, research on inpatriates is still limited. Up to now, only Reiche (2006; 2007) examines inpatriates' role in knowledge sharing, focussing on social capital building at HQ and its consequences on inpatriates' knowledge acquisition and –transfer. On the other hand, expatriates' role as carriers of knowledge either during their assignment (Riusala & Smale, 2007) or after repatriation (Lazarova & Tarique, 2005; Oddou, Osland & Blakeney, 2009) has been thoroughly examined in the international management literature (Minbaeva & Michailova, 2004). But, generalizing research findings on expatriates to inpatriates is only possible to a very limited extent, since they differ in their status, duties and influence (Harvey & Buckley, 1997; Reiche, Kraimer & Harzing, 2009). The concept of inpatriation was introduced in the international management literature some 20 years ago (e.g. Harvey, 1997; Harvey & Buckley, 1997; Harvey, Novicevic & Speier, 1999). Existing research on inpatriates addresses purpose and critical success criteria of inpatriate assignments (Reiche, 2006), their assimilation and socialization strategies (Harvey, Speier & Novicevic, 1999; Moeller et al., 2010) and possible contributions of networking in supporting inpatriate settlement and adjustment to the new job (Harvey, Novicevic & Speier, 1999). Further papers address the role of interpersonal trust in developing effective global relationships through inpatriation (Harvey et al., 2011) and HRM instruments for inpatriation (Harvey, Novicevic, Buckley & Fung, 2005; Harvey, Novicevic & Speier, 1999).

Inpatriates role in knowledge sharing is manifold: They provide their HQ colleagues with their specific cultural and social knowledge and their understanding of their host countries. Because of their intimate familiarity with operations, markets, political influence and the culture in their countries of origin, this knowledge is often tacit (Moeller et al., 2010). "Given the increasing realization that knowledge is embodied in individuals and highly contextual in nature, inpatriate assignments represent an important transmission channel for subsidiary knowledge to HQ and vice versa, on repatriation" (Collings, McDonnell, Gunnigle & Lavelle, 2010, p. 593). Yet, it is not possible to simply "transfer" knowledge from a sender to a receiver, the receiver rather rebuilds offered knowledge on the basis of his cognitive structures and past experiences and thus creates new knowledge (Bender & Fish, 2000). Accordingly, in this paper we define knowledge as the fluid repertoire of concepts, relationships and action routines that are more or less difficult to articulate and that have proven successful for its carrier in pursuing his or her goals. Hence, we avoid to restrict knowledge on the representation of reality and include typical types of knowledge (*know what, know why, know how*) in our definition. By emphasizing the relevance of actions, we differentiate knowledge from error and stress the subjective nature of knowledge. Knowledge is conceptualised as the result of individual learning processes and thus changeable. Furthermore, according to our understanding knowledge sharing only occurs if the sender not only communicates data and information, but rather own assumptions, priorities, values and explanations. Sending and receiving knowledge are further different behaviours and therefore differ in their underlying micro-mechanisms (Gupta & Govindarajan, 2000; Minbaeva, Foss & Snell, 2009). To summarize, in their role as **knowledge receivers**, inpatriates are supposed to deepen their technical know-how, get to know decision makers at HQ, adopt values and standards of corporate culture and learn to apply management tools. As **knowledge senders**, they are required to sensitize, inform and train HQ staff in regard to the peculiarities of business processes in the assigning subsidiary and their home country's market, political, institutional and cultural context (Harvey, Speier & Novicevic, 1999; Harvey, Novicevic & Speier, 2000).

### 3. METHODS AND SAMPLE

#### 3.1 Method

We chose a qualitative approach to investigate knowledge sharing between inpatriates and HQ staff, taking into consideration the multidirectional, complex and under-researched nature of the phenomenon. We designed a combination of a focus group interview with the critical incident technique (CIT) in order to gain rich contextual data that allow for the examination of both individual as well as organizational levels of analysis. In focus group interviews, a limited number of participants sharing similar backgrounds, interests or experiences discuss a predetermined topic (Krueger & Casey, 2000). Focus group interviews enable the researcher to uncover and understand respondents' thoughts, behaviours, and customs regarding a specified topic – knowledge sharing, in our case. The discussions are guided by a moderator, with groups consisting between three up to twelve participants, depending on the main target or research

interest (Barbour, 2007; Kitzinger, 1995). While the focus group atmosphere encourages participants to speak freely about behaviours, experiences, opinions or values they possess allowing researchers to better understand how participants arrive at, alter, and sustain their perspectives they do not offer the same depth of information as one-to-one interviews. Hence, to get a more detailed pursuit of information about knowledge sharing encounters between inpatriates and HQ staff we included elements of the CIT in our focus group interviews. The CIT aims at gathering specific data and generating thick descriptions of behaviour in situations that are extraordinarily difficult (i.e., “critical”) (Flanagan, 1954).

We included elements of the CIT in our focus group interviews in two different ways: First, we conducted and video-taped an interview according to the CIT with a foreign research associate at the University. In this interview, he described a successful situation of knowledge exchange with a local colleague. A three-minute-compilation of this video-taped interview was then shown at the beginning of the focus groups as a narrative inducing opening and to encourage detailed descriptions by the focus group participants in the further discussion. Secondly, a question according to the CIT was directly included in our interviewing schedule, asking for a situation of knowledge exchange with an inpatriate, respectively German colleague, which the respondent found to be very successful.

### **3.2 Sample**

We conducted ten explorative focus group interviews with either groups of inpatriates or their domestic colleagues from three German MNEs operating in different industries as well as one group of foreign scientists respectively their local counterparts at the University. The participants came from different departments and hierarchical levels. Altogether, 19 inpatriates from 10 different countries of origin participated in focus group discussions (i.e. averaged 4 inpatriates per group session). Most of them are male (~ 84%) with an average age of 36 years. The average duration of the assignment is 3-4 years, and the average duration of stay at HQ at the time of the interviews about 2 years. On average, 5 participants attended in a focus group interview with German colleagues (n=23); most of them male (~74%) with an average age of 41 years. Discussions lasted about 75 minutes. Except for one, interviews with inpatriates were conducted in English and with HQ staff in German. The focus group interviews were transcribed and subjected to content analysis.

## **4. RESULTS AND FRAMEWORK OF KNOWLEDGE SHARING BETWEEN INPATRIATES AND HQ STAFF**

The focus group interviews provided us with valuable information on

- types of knowledge that are shared between inpatriates and HQ staff,
- the role of knowledge sharing in their daily working routine,
- the ways in which they share knowledge, as well as
- supporting respectively hindering factors in sharing knowledge,
- the usage of the knowledge offered by colleagues, and
- examples for situations of successful knowledge sharing.

Based upon these findings we summarized organizational, relational and individual factors influencing knowledge sharing between inpatriates and HQ colleagues in a conceptual framework (see Figure 1).

Following this tentative framework we can distinguish several potentially influential factors. First, there is the knowledge that is being shared (*know what, know why, know how*). Second, there are two individuals disseminating, adopting and using knowledge. Third, knowledge sharing depends on the willingness and competence of inpatriates and their colleagues at HQ to disseminate and to adopt knowledge. Forth, willingness and competence to disseminate or adopt knowledge are influenced by factors on the individual, relational, and organizational level. Fifth, knowledge sharing between these partners is embedded in specific communication situations that enable or restrain disseminating and adopting knowledge. The relationships as pictured in the framework and their deduction from the results of our focus group interviews are described in more detail in the following paragraphs.

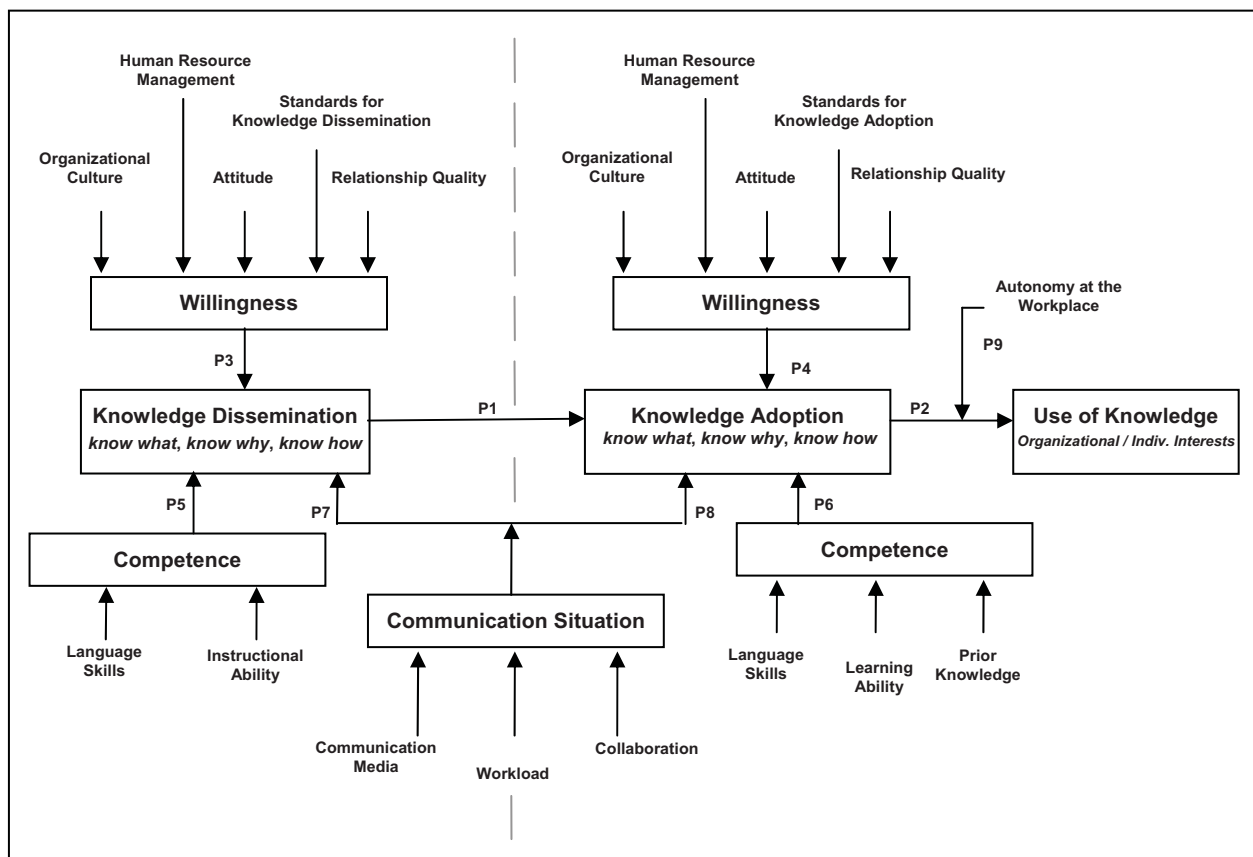
### **4.1. Knowledge dissemination, adoption, and use**

In our framework, the process of knowledge sharing is divided into the dissemination and adoption of knowledge and, since we are interested in the whole process of knowledge sharing, we additionally



include the subsequent use of the knowledge that has been offered by a colleague. We acknowledge that both inpatriates and HQ staff act as senders and receivers of knowledge. Yet, our results indicate that the inpatriates' role in sharing knowledge depends on the main target of the assignment. This may either be adopting knowledge about processes at HQ and imparting this knowledge to local colleagues upon repatriation, or communicating local knowledge from home countries to HQ staff. Our primary focus is restricted to knowledge sharing in the work unit at the HQ the inpatriate has been assigned to, although we acknowledge that inpatriates can also share knowledge with others outside their work unit or company. Further, at this point we exclude from our discussion the important dimension of implicit vs. explicit knowledge - properties of knowledge itself that have been extensively discussed in the literature (for a review see Argote, McEvily & Reagans, 2003).

**FIGURE 1: CONCEPTUAL FRAMEWORK OF KNOWLEDGE SHARING IN MNEs**



The analysis of our focus group interviews revealed that the aforementioned three types of knowledge - *know what*, *know why*, and *know how* – are indeed shared between inpatriates and HQ colleagues. The topics further address both professional practice and private daily practice. Regarding the *know what*-type of knowledge relating to professional practice, inpatriates communicate e.g. their knowledge about local regulations concerning import requirements in their home countries to German colleagues, if they want to send material abroad. Conversely, German colleagues communicate facts regarding Germany, work and the company as well as private everyday-life in Germany to inpatriates. Regarding the *know why*-type of knowledge, according to our results inpatriates provide HQ staff e.g. with their insights into reasons for specific (culturally driven) behaviour of employees from their foreign subsidiaries, or gain explanations by HQ staff that help them understand the behaviour of Germans, or why processes at HQ are the way they are. Addressing *know why* related to private daily practice, German colleagues and inpatriates share their knowledge about holidays and traditions and thus communicate cultural aspects. The *know how*-type of knowledge identified in our focus group interviews mainly addresses ways of communicating effectively with members of the respectively other cultural group. A German colleague of an inpatriate described for



example, how differently criticism is expressed by Germans compared to English colleagues, as she learned through working with an English inpatriate. While according to her Germans would criticize quite clear and direct, the English would criticize in a much “more diplomatic way”. She further describes how she adopted these criticism techniques from the inpatriate. This is also an example for how the involved become aware of the cultural impacts on the communication of professional knowledge. Our findings regarding *know why* and *know how* are closely related to each other - and of course the boundaries between the different types of knowledge blur in practice, as e.g. Berthoin Antal (2000, p. 37) indicates: “it is in the synthesis of the types of knowledge that the significance often lies. Frequently, for example, knowing ‘what’ can be applied effectively only ... when one also knows ‘how’ [...]”. In light of the above discussion, we propose:

*Proposition 1:* The more knowledge is disseminated by an inpatriate respectively HQ colleague, the more knowledge is adopted by a HQ colleague respectively inpatriate.

The process of knowledge sharing as depicted in our framework includes the subsequent use of the knowledge that has been shared. Some respondents reported they would test knowledge that has been offered by an inpatriate respectively German colleague in several situations, and only if it proves worth it becomes internalized and used in the long run. Inpatriates state they would internalize particularly business etiquettes with progressing duration of the assignment. Respondents specified that knowledge offered by the counterpart is used in the daily work and improves its quality. Based on this experience some inpatriates stated that upon return to their subsidiary they will disseminate the knowledge they gathered to their compatriots. Some HQ respondents told that knowledge sharing on cultural differences is most important for them, supporting the company’s internationalization and their intercultural competence. Thus, they improve their soft skills through the interaction with inpatriates. One German colleague critically noted that inpatriates’ knowledge could be used more intensively, so far this would happen rather by chance, accordingly only single individuals would “tap” inpatriates’ knowledge. The potential capacity of the inpatriates’ knowledge, e.g. for preparing HQ staff for assignments in the inpatriates’ home country, would remain widely unused. We propose that:

*Proposition 2:* The more knowledge has been adopted, the more knowledge is used.

#### **4.2 Willingness to disseminate / to adopt knowledge**

Research suggests that the ability and motivation of a sender and a receiver (that jointly form their disseminative respectively absorptive capacity) as well as their relationship are important drivers for the success or failure of knowledge sharing activities (Bonache & Zárraga-Oberty, 2008; Gupta & Govindarajan, 2000; Minbaeva, 2007). In our focus group interviews, amongst others through asking for factors that support or hamper knowledge sharing, we found that the willingness to disseminate and to adopt knowledge indeed is an important driver for individuals whether or not to share knowledge. The willingness to disseminate and to adopt knowledge further is determined by factors at organizational, individual, and relational levels of analysis. These determining factors are described in the following.

*International organizational culture:* In our focus group interviews, inpatriate and German respondents revealed that to improve knowledge-sharing conditions, an international climate and atmosphere at HQ would be essential. This would be promoted by internationally composed teams throughout the company. English should be implemented as corporate language - in daily practice and not just on the paper. In more diverse teams, the less the possibility of HQ staff to switch to their mother tongue in discussions. Furthermore, the organizational culture should promote an equal treatment and value of employees regardless of their nationality. Generally, the organizational culture should be informal, allowing private exchange besides work and an informal form of address. An open-door-policy and meeting corners (e.g. coffee machines on the floors) would promote a ‘getting-together atmosphere’ and invite for informal discussions, to name just a few of the respondents’ suggestions.

*HRM:* Following our results the willingness to share knowledge corresponds with the soft skills to do so, and, given the different heritage of the knowledge-sharing partners, at least one party has to be confident in speaking in a foreign language. Our respondents give manifold insights into HRM instruments that may support the willingness to share knowledge in intercultural encounters: First of all, before the assignment,

the inpatriate should attend a cross-cultural training tailored to Germany and comprehensive German language courses. Even if the corporate language is English, basic skills in the native language at the receiving unit are strongly recommended to get along in the country or to interact with people lower in the hierarchy who may not speak English at a satisfying level. Additionally, HQ staff would value basic skills in their native language. HQ staff, on the other hand, should be provided with intercultural trainings, in order to be sensitized for the intercultural encounter. At the beginning of the assignment, HRM should support inpatriates with a comprehensive induction program. According to our results, this is of utmost importance for a good start and to get in contact with the new colleagues – but often uncared-for in corporate practice. A relocation service should support inpatriates in all settling affairs, and respondents further acknowledged that a mentor would be of assistance especially at the very beginning in all occurring questions and to integrate the inpatriate in his network at HQ. Inpatriates complained that interacting with HQ staff that never gained working experience abroad would be difficult. Thus, sending HQ staff on assignments or shorter international business trips is a possibility to promote an international atmosphere at HQ. According to our results, HRM is also well advised if taking international experience, English language skills and openness into account as critical hiring criteria. Finally, the financial attractiveness of the assignment may influence the inpatriates' willingness to get involved in knowledge sharing.

Standards for knowledge dissemination / adoption: In the focus group interviews, we learned that knowledge sharing is influenced by the perceived value of knowledge sharing in the company, and that the importance of the inpatriates' knowledge for the company's overall success should be highlighted by management. Accordingly, the standards for knowledge sharing should be formulated in a way that makes it unmistakably clear that sharing knowledge is valued and promoted. Such a knowledge sharing climate could be supported through a knowledge management system, as mentioned by a few respondents. This knowledge management system, amongst others, should include and signal the inpatriates' knowledge upon their arrival.

Attitude: Now we come to a determinant of the willingness to share knowledge at the individual level. Some aspects mentioned in the focus group interviews addressed the negative influence of a negative attitude of HQ staff towards the inpatriates' knowledge. The impression emerged that inpatriates largely perceive their German colleagues as not being open towards new ideas, methods etc. but rather keeping an arrogant image, assuming that because of their education or technical know how in their country they would know things "better". To *adopt* knowledge, on the other hand, the willingness to accept others' knowledge without devaluating it as "coming from outside" would be critical. Following one discussion of inpatriates, the interest that potential knowledge sharing partners have in another and their interest in other cultures would be more crucial in knowledge sharing than speaking a common language. Thus, openness is important in order to get in contact and share knowledge. The attitude also plays a role in the willingness to *disseminate* knowledge. Thus, a person being suspicious of everything that seems foreign to him/her might also want to keep his/her knowledge to him-/herself rather than sharing it, we assume. On the other hand, respondents reveal that to participate in knowledge sharing activities at HQ, inpatriates are supposed to also accept and partly adapt local principles. We conclude that if one is interested in, open for and respectful of another person and / or culture, one is more willing to share knowledge with people with different cultural backgrounds.

Relationship quality: Regarding the relational aspect of our framework, an inpatriate stated that building up trust- and respectful relationships would be a basic requirement for knowledge sharing. While one group of inpatriates discussed that private relationships and working relationships would be different parts and should not be mixed up, most discussants agreed that private contacts would support the willingness to share professional knowledge. Accordingly, in order to build and maintain relationships it is assumed to be important to take time for and support each other. In order to build up a trustful relationship, it is also advised to prepare oneself for the respectively other cultural background, in order to get sensitized for possible misunderstandings based upon cultural differences. Both inpatriates and German colleagues stated they would address a colleague whose knowledge is relevant for one's own work, may it be a German or an inpatriate, and knowledge sharing – as stated by some respondents – would be a two-side activity, it seems that reciprocity is also a crucial quality of a relationship in which knowledge is being shared. Own shortcomings and strengths of the other thus should be recognized. Further, socio-

demographic factors may influence the relationship quality: Accordingly, it can be presumed that people in a similar age and in a similar life stage may have more common interests than a person in a very different situation. From the above discussion we draft the following research propositions:

*Proposition 3:* Organizational culture, HRM, standards for knowledge dissemination, attitude and relationship quality are related to the willingness to disseminate knowledge.

*Proposition 4:* Organizational culture, HRM, standards for knowledge adoption, attitude and relationship quality are related to the willingness to adopt knowledge.

#### **4.3 Competence to disseminate / to adopt knowledge**

If a person is willing to share knowledge, s/he moreover has to be competent to do so. The different determinants of the competence to disseminate and adopt knowledge are discussed in the following.

Language skills: Language barriers were amongst the most frequently mentioned aspects when asked for factors that hamper knowledge sharing. In none of the three participating companies English was the official corporate language throughout all departments. Most respondents revealed that the language to communicate with inpatriates in most cases would be English. On the other hand, some inpatriates bewailed the unwillingness of large parts of their HQ colleagues to communicate in English. They partly observed that meetings would often start in English, but in the further course HQ staff would tend to switch back to German. This is interesting as in a short questionnaire that was handed out prior to the focus groups, the majority of HQ participants (78%) assessed their English language skills as very good or fluent. Inpatriates further encounter difficulties to pick up conversation "in the corridors", e.g. Participants emphasized that at least basic German language skills would be appreciated. It is on the other hand not well received if inpatriates communicate in their mother tongues (if not English) with other inpatriates. Difficulties were further discussed that would occur if two parties communicate in English, with both non-native speakers: Much scope for interpretation and chances for misunderstandings would emerge. In one case, however, a different picture arises: A native-English-speaking inpatriate told that he wanted to learn German, but, as his German colleagues wanted to speak English with him to improve their English skills, it would have been impossible for him. Some German colleagues accordingly said their English language skills would have improved through the interaction with inpatriates. A further pitfall arises when inpatriates are (almost) fluent in German: Here, an inpatriate indicated that difficulties might still occur because one still wouldn't be aware of all nuances of the language. If being involved in drawing up contracts, e.g., native speakers should control and correct where necessary. Having sufficient skills in a common language is thus of outstanding importance in order to share knowledge with another.

Instructional ability: In order to *disseminate* knowledge, the second influence on the competence considered in our framework is the ability to give effective instructions, i.e. to pass one's knowledge on to inpatriates respectively HQ colleagues. Here, our discussants revealed communicativeness, openness, extroversion and the ability to withstand conflicts and be able to take criticism and explain peculiarities to be of positive influence, while insecurity is perceived as negative.

Learning ability: The equivalent to the instructional ability in regard to knowledge *adoption* is the learning ability. In this context, focus group participants mentioned attributes and behaviour such as being curious and interested in other cultures and colleagues, cooperative and willing to learn and asking for clarity in situations that may be misunderstood because of cultural differences. Arrogance and impatience on the other hand were perceived to have a negative influence.

Prior knowledge: Finally, as we assume that a pure transfer of knowledge does not exist but the knowledge recipient rather rebuilds the knowledge he has been offered according to his knowledge basis, the recipient's prior knowledge influences his competence to *adopt* knowledge. As this would address all aspects of life, we narrow down the prior knowledge as follows: The more the receiver knows about the sender's cultural and professional background and his current working context and / or tasks, the better he can integrate and reconstruct the knowledge offered. From the previous paragraphs we propose:

*Proposition 5:* Language skills and instructional ability are related to the competence to disseminate knowledge.

*Proposition 6:* Language skills, learning ability and prior knowledge are related to the competence to adopt knowledge.

#### **4.4 Communication situation**

Knowledge sharing in line with our conception requires a direct or medium-based two-way communication. Accordingly, besides a willing and competent sender and receiver an actual situation in which knowledge sharing can occur is required. Thus, the knowledge sharing partners need access to appropriate communication media. These and further determinants are now discussed.

*Communication media:* According to our results, knowledge is preferentially shared through oral communication (face-to-face), whether in official meetings, discussions with colleagues or casual conversations. Sharing knowledge further proceeds through observations in daily cooperation, as respondents indicated. Joint activities and meeting places at HQ are thus reported to be important to get in touch. This is congruent with our finding that knowledge sharing would often “happen in a natural way” (inpatiate), without the intention to share knowledge, but rather embedded in daily working processes. In addition, the advantages and disadvantages of email, phone and written documents in sharing knowledge were discussed. It has been acknowledged that the suitability of these media depends on content, counterpart and situation.

*Workload:* Respondents revealed that to share knowledge, it is crucial to take the time to do so. A heavy workload thus is a hindrance in knowledge sharing.

*Collaboration:* Next to personal sympathy and mutual trust and respect, the contact intensity is an essential component to create an environment in which trustful relationships may grow and knowledge shared. This can be steered through specified compulsions for cooperation that provide knowledge sharing encounters. Taken together, we conclude:

*Proposition 7:* Communication media, workload and collaboration are related to the communication situation in which knowledge is disseminated.

*Proposition 8:* Communication media, workload and collaboration are related to the communication situation in which knowledge is adopted.

#### **4.5 Autonomy at the workplace**

In order to use the knowledge that has been adopted, the knowledge receiver needs a specific scope of action that allows for trial and error to give new ideas and alternative procedures gained through the interaction with inpatiates respectively HQ colleagues a chance. This mainly addresses the use of knowledge for organizational interests. Our model therefore acknowledges a persons' autonomy at the workplace in fulfilling his / her work task as a factor that moderates the use of knowledge. Thus:

*Proposition 9:* The autonomy at the workplace positively influences the extent of the use of knowledge adopted for organizational interests.

### **5. CONCLUDING REMARKS**

Knowledge sharing across national borders and seeking “new” knowledge and alternative perspectives is of utmost importance in an increasingly globally intertwined business world. What at a first glance may seem to be “foreign” often comprises a chance for important innovations - and without continuing change, companies are not competitive in the global marketplace. Our paper contributes to the literature on knowledge flows within MNEs: By providing a tentative framework it extends our understanding of knowledge sharing processes at the individual level and the contribution of inpatiates to knowledge sharing in MNEs. The framework introduced in this paper builds on qualitative focus group interviews. It summarizes the multilevel factors that, according to the inpatiates and their colleagues at HQ who participated in our focus group interviews, impact on knowledge sharing between inpatiates and HQ staff at the workplace. In the future, a growing number of inpatiate assignments are to be expected. Thus, we hope that our framework may be helpful in developing initiatives to improve knowledge sharing in MNEs. Furthermore, our finding that knowledge is preferably shared orally in personal contacts suggests that



international assignments are an important tool to link the different sub-units of the MNE and their employees' knowledge. Direct suggestions for MNEs to promote knowledge sharing between inpatriates and HQ staff emerge from our research. As they are already outlined in the results' part of this paper, we do not repeat them in detail at this point. But, we would like to emphasize some aspects: Besides environments that enhance private contacts at work, also after work activities like sports competitions and interest groups may be organized and supported by the company to enlarge knowledge-sharing opportunities. Furthermore, both inpatriates and domestic colleagues have to be prepared for the transnational encounter, its chances as well as pitfalls. Most of the inpatriates have issues with the native language at the receiving unit, i.e. German. Thus, to attract inpatriates and enable them to fully integrate, English should be implemented as corporate language and HQ staff trained accordingly. Related to this is the necessity to create an international atmosphere, in which cultural diversity is promoted. Management should further raise employees' awareness for the necessity of knowledge sharing and the specific knowledge that inpatriates possess. A structured introduction program according to our findings is furthermore essential. It provides the basis for further encounters and first impressions, which may influence the further development of trustful relationships in which knowledge is shared.

Nonetheless, our findings should be interpreted cautiously in the context of study limitations: In our qualitative approach, we gained individual real-life experiences and contrasting records from different participants and focus groups. However, altogether our sample consists of 42 respondents. Thus, quantitative data is needed to verify our findings and test the proposed model. Our sample is restricted to German MNEs. Consequently, there is a need for studies from a wider variety of MNEs from different countries of origin in order to generalize our findings. While our research provides a first step towards understanding the process of knowledge sharing between inpatriates and HQ staff and its manifold antecedents, future research should enlarge our findings and address the interactions between the numerous determinants. Longitudinal research would be a desirable way to enhance our understanding of the determinants of knowledge sharing and how to facilitate it within MNEs.

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# THE EXPERIENCE OF REGIONAL TRADE AGREEMENTS AMONG ECO MEMBER NATIONS

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## ABSTRACT

*The countries that form Economic Cooperation Organization (ECO), Afghanistan, Azerbaijan, Iran, Kazakhstan, Kyrgyzstan, Pakistan, Turkey, Tajikistan, Turkmenistan and Uzbekistan are on the path towards trade liberalization through agreements such as the Preferential Trade Agreement (PTA) and the Economic Cooperation Organization Trade Agreement (ECOTA). During March 2009 ECO Summit the member states of the organization have declared to make ECO region a Free Trade Area (FTA) by 2015. The aim of this paper is to provide an overview of the attempts, progress and issues in relation to regional trade agreements among the ECO member nations.*

**Keywords:** Economic cooperation organisation, regional economic integration, regional trading arrangements.

## 1. INTRODUCTION

The 1977 Treaty of Izmir, signed by Iran, Pakistan and Turkey was the founding document of the Economic Cooperation Organisation (ECO). However, the organization was dormant between the period between 1979 and 1985. The three founding members then attempted to revive the organization by offering preferential tariff treatment to one another, but the list of eligible products was extremely restricted. At the eighth ECO summit in Dushanbe in September 2004, Iran proposed committing to an ECO free trade zone by 2015, but no practical steps were taken to achieve this goal. In 1992 the five Central Asian countries, together with Afghanistan and Azerbaijan, became members of the ECO. The member nations of the expanded organization contained over 300 million people, and included all non-Arab Islamic countries, west of India. In 1993 the ECO gained observer status at the United Nations General Assembly and it was later accorded observer status at the World Trade Organisation (WTO). In 1996 the Council of Ministers approved a restructuring, which included the establishment of a permanent ECO Secretariat in Tehran. The countries that form the ECO, Afghanistan, Azerbaijan, Iran, Kazakhstan, Kyrgyzstan, Pakistan, Turkey, Tajikistan, Turkmenistan and Uzbekistan are on the path towards trade liberalization through agreements such as the Preferential Trade Agreement (PTA) and the Economic Cooperation Organization Trade Agreement (ECOTA). During the ECO Summit held in March 2009, member states of the organization have declared to make ECO region a Free Trade Area (FTA) by 2015.

The aim of this paper is to provide an overview of the attempts, progress and issues in relation to regional trade agreements among the ECO member nations. To our knowledge there is a lack of literature on this subject.

## 2. THE ECO REGION

Pakistan, Iran and Turkey entered into a grouping called Regional Cooperation for Development (RCD) in 1964. For fifteen years (1964-79) after its inception, the intra-regional trade never exceeded the pre-RCD level of less than 2 percent of their aggregate GDPs. The ECO is a successor of the RCD and inherits all its problems. The ECO is an inter-governmental regional organisation, founded in 1985 by Iran, Pakistan and Turkey, to promote economic, technical and cultural cooperation among the member states. ECO is the successor organisation of RCD, which remained functional from 1964 to 1979 and its basic charter is enshrined in the Treaty of Izmir originally signed in 1977. In 1992 it was expanded to include seven new members—Afghanistan, Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan.

The origins of the ECO had some similarity with those of Association of South-East Asian Nations (ASEAN), as both regional bodies were the result of geo-strategic considerations to which an economic dimension was added. The RCD/ECO did not have much economic impact before its expansion in 1992 and even thereafter. The Treaty of Izmir, which is the basic charter of ECO, lays down the following objectives of the ECO: Promotion of sustainable economic development of member states and raising the standard of living and quality of life of its people; Promotion of regional cooperation in economic, social, cultural, technical and scientific fields; Progressive removal of trade barriers and expansion of intra-regional trade; Development of transport and communication infrastructure among the member states; Human resource development; Development of the agricultural and industrial potential as well as human and natural resources of the region; Economic liberalisation and privatisation; and Utilisation of region's natural resources, in particular energy resources.

The people of the region are linked not only by natural geographic proximity but are also woven into centuries old historical, religious and cultural bonds. In pre-colonial times, trade flowed freely within the region. There was also free movement of labour. The onset of colonialism disrupted these links, and the Soviet advance isolated them completely. As these states have achieved their independence and sovereignty, there is no reason why traditional cultural links could not be reasserted and joint efforts made for fostering prosperity and closer understanding among the peoples of the region (Pervez, 2004).

With a total population of about 380 million (6.1 percent of the world population), the combined GDP of the ECO countries amounted to US\$ 500 billion in 2003. This constituted only 1.4 percent of the world GDP. The region is spread over an area of about 8 million square kilometres, twice the size of EU. At present the member countries produce about 6.8 percent of world crude oil supply and absorb about 3.7 percent of world crude oil demand. The region exports more than 45 percent of the oil it produces, up from 40 percent during 1990s. The region is not only rich in natural resources but also in human capital. Despite being better endowed in natural resources, the economies of the region are facing serious problems such as external debt, unemployment and poverty. Countries like Turkey, Iran and Kazakhstan with per capita GNI of \$ 2790, \$2000 and \$ 1780 respectively are the high-income member countries. Others, like Pakistan, Uzbekistan and Kyrgyzstan with per capita GNI of \$ 470, 420, 330, respectively, are low income countries. A more relevant indicator for regional cooperation is the share of manufactures in exports; Here only Pakistan, Iran and Turkey figure prominently, having a high export concentration in automobile, industrial equipment, textiles and clothing industries (World Bank, 2005). During the five-year period 1998-2002, the total merchandise exports of the ECO member states reached the peak of US\$ 94.6 billion in 2002. The region contributed 1.54 percent and 1.65 percent to the world merchandise exports and imports, respectively, in 2003.

The ECO member states have made efforts to promote intra-regional trade. They have taken steps for improvement of regulatory frameworks and removal of tariff and non-tariff barriers in the region. The intra-regional trade situation is, however, far from satisfactory. In 2002, the intra-regional exports of the ECO accounted for 5.4 percent. Total intra-regional trade volume of the ECO (excluding Afghanistan) in 2002 increased to US\$ 10.2 billion from US\$ 8.6 billion in 2001. The intra regional trade ratio of the ECO (excluding Afghanistan) in 2002 like the previous years could not cross the threshold of 6.0 percent. In fact, despite a high average rate of growth in merchandise exports (14.9 percent), the region's share in total merchandise exports of the world increased by only 0.2 percent over the previous year.

### **3. EXPERIENCE OF REGIONAL TRADE AGREEMENTS (RTA) OF ECO MEMBER NATIONS**

In May 1991, a Protocol on Preferential Tariffs was signed by then ECO members of Iran, Pakistan and Turkey. Commodity lists were drawn up and implementation started in May 1993. However, this Protocol could not make any headway as the lists drawn were very limited in nature and the products on which preferential tariff was offered were not traded and a 10 percent margin could not have much impact anyway. In July 2003, the ten ECO countries concluded a Trade Agreement (TA), known as ECOTA. The Agreement is a major step towards realisation of the objective of trade barriers removal and establishment of a Free Trade Area (FTA) in ECO region, by 2015. It is comprehensive in terms of commodity coverage to be realised over a period of 8 years, by 2015 and will reduce the tariff to a maximum of 15 percent on 80 percent of the goods traded. The three founding member states (Iran,

Pakistan and Turkey) agreed to adopt a fast track approach for early implementation of ECOTA by reducing maximum tariff to 10 percent within 5 years instead of 8 years (ECO, 2004; 2005). The last Conference of ECO member states, held in March 2009, has reiterated its commitment to the goal of making ECO region a Free Trade Area (FTA) by 2015. This statement shows the interest of ECO member states in economic integration of the region.

The ECO offered to the newly independent countries a regional trading arrangement that could promote a southward reorientation of their trade from the patterns imposed within the Soviet economy. The ECO aims to promote economic, technical, and cultural cooperation among its member states. The activities of ECO are organised through the following eight working groups or technical committees in the fields of: Economic and commercial cooperation, transport and communications, agriculture, energy, infrastructure and public works, narcotics, educational, Scientific and cultural matters.

The ECO members have established eight regional institutions: a trade and development bank, an insurance institute, a shipping company, an airline, a reinsurance company, a chamber of commerce, a science foundation, and a cultural/educational institute. In 1995 it was agreed that the bank would be in Istanbul, and subsequently the ECO issued a statement of intent that the reinsurance company would be located in Pakistan. Amidst bickering over location and funding, implementation proceeded slowly. The shipping company operated two leased multipurpose cargo vessels in the Persian Gulf and some ships plying the Caspian Sea, but despite being the sole profitable ECO project the shipping line ran into financial difficulties due to some ECO members' failure to make their contributions to the capitalisation fund (Afrasiabi, 2000).

The ECO heads of state have met frequently since 1992, and the summits have typically included grand declarations. The implementation record is, however, poor. This is highlighted by the history of the ECO transit agreements. Only eight countries signed the 1995 transit trade agreement, and the two non-signatories, Afghanistan and Uzbekistan, straddle some of the most important routes in the region. The agreement officially entered into force in December 1997, but by early 1999 only five national governments had ratified the agreement. The modified, and much watered down, 1998 transit agreement had, as of mid-2000, only been approved by Azerbaijan and Tajikistan, whose geographical position makes them marginal countries to an ECO-wide transit arrangement.

The unwillingness of key member countries to accept the principle of unhindered passage of goods in transit is a major obstacle to any concrete achievement by the ECO. As with the Central Asian Cooperation Organisation (CACO), the practical impact of ECO has been limited. In both organizations a fundamental obstacle to regional integration is the similarity of the member countries' economies, which all tend to be specialized on a small group of primary products (oil, gas, minerals, and cotton). Trade between the five Central Asian countries and their southern neighbours has expanded since 1992, admittedly from a low base and more slowly than many observers expected. However, it has done so on a non-discriminatory Most Favoured Nation (MFN) basis rather than within a regional trading arrangement such as the ECO founding members appear to have envisaged in the early 1990s (Pomfret, 2005).

#### **4. PROMOTION OF TRADE AND INVESTMENT AMONG ECO COUNTRIES**

One primary objective of the ECO includes promotion of trade and investment among its member countries. To attain this objective, ECO developed necessary regulatory framework for investment opportunities and initiated specific measures towards progressively removing trade barriers within intra and inter-regional trade and investment trends. While the ECO strive for the liberalisation and promotion of trade and investment, states follow the following strategy: (i) Removal of tariff and non-tariff barriers in the region, providing a regulatory frame work and enabling environment for trade, (ii) Develop a favourable regulatory investment framework for optimum utilisation of economic resources, and (iii) Increasing the interaction of private sector (ECO, 2009, p.2).



The ECO launched the Economic Cooperation Organization Trade Agreement (ECOTA), to progressively remove non-tariff barriers, and also gradually reduce tariffs in the region. ECOTA serves as the primary vehicle for removal of trade barriers and establishment of Free Trade Area in the region by 2015. Currently, five member ECO states have signed the agreement. Afghanistan and Iran have almost completed the process of signing this agreement which will become effective on the 30th day after the date of receipt of the instrument of ratification, from the five Contracting Parties (ECO, 2009).

Considered comprehensive in terms of commodity coverage, ECOTA will be implemented gradually over a period of eight years; reducing tariffs to a maximum of 15% over 80% of the goods traded. In January 2004, the new High level Expert Group (HLEG) on Trade, Investment, and Other Related Matters met in Ankara and agreed on a resolution to prepare for a Protocol on Fast Track Approach to implement ECOTA early by reducing the highest tariff slab from 15% to 10% over five years rather than eight years. The second HLEG met on Trade, Investment, and Other Related Matters in Islamabad during March 2005 to finalise the draft text of the said Protocol. In response to a number of reservations/principles that emerged during the third HLEG meeting held in Istanbul in July 2005 the member states did not sign the said Protocol. In Kabul, at the 4th HLEG meeting held during November 2005, due to differences of opinion, a new formulation for Principles on the Protocol of Fast Track Approach could likewise not be finalised by the three member states (ECO, 2009, p.5).

Despite and in the midst of challenges it must overcome, ECO continues to: "... foster partnership and strengthen its relations with relevant international and regional organisations to secure technical and financial assistance for its endeavours in the field of trade and investment. These organisations inter alia include ADB, ASEAN, ESCAP, ITC, OIC/IDB, UNCTAD, UNDP, UNECE, UNIDO, WCO and WTO. Moreover, implementation of the decisions/agreements reached and the MOUs with international organisations are now closely being reviewed and updated in line with ECO's new and emerging needs and requirements. ECO is also being granted observer status by the high profile regional and international organisations. (ECO, 2009, p. 21)

Several empirical studies have been conducted in relation to ECO member countries and their bilateral trade relations with each other, as well as with the rest of the world. Tossi, Moghaddasi, Yazdani, and M. Ahmadian (2009) utilised a generalised gravity model to assess the impact of Iran membership in ECO on agricultural exports. These authors explain that one of the objectives of the ECO is to expand intra-regional trade, as well as the trade of the region with the rest of the world. According to Tossi, Moghaddasi, Yazdani, and Ahmadian, directly and indirectly ECO possesses the potential to positively affect Iran's agricultural trade. "Indirectly, because similarity degree between Iran and the other ECO members in religion, border, ethnic, language and is very high in relation to the other chosen trade partners of Iran. As a result, by gradually reducing trade barriers in the ECO region and using of these ECO members' similarities, Iran would be positioned to expand its agricultural exports.

Mirzaei and Heidelberg (2006) investigated the performance of livestock production and exports of selected ECO member countries and examined comparative advantage indices such as Domestic Resource Cost (DRC) and Revealed Comparative Advantage (RCA). These authors explain that the agricultural sector serves as a primary contributor to the national economies of the ECO member countries. According to Food and Agricultural Organization (FAO) estimates, in 2002 "agriculture generated 25.2 percent of Gross Domestic Product (GDP) and employed 42 percent of the economically-active population in the ECO region" (Mirzaei & Heidelberg, 2006, p. 1).

Although with considerable inter-country variations, the agricultural sector proves vital to the economies of ECO countries, especially in regard to its contribution to the GDP and provision of employment opportunities. In 2003, the share of agriculture of total GDP ranged from more than 47% in Afghanistan to less than 8% in Kazakhstan. In Iran, Turkey and Azerbaijan, it ranged between 10-20% and between 20 and 35% in the remaining five ECO countries. During 2003, the agricultural labour force consisted of 42% of the total labour force in the region. In addition to

supplying food and feed materials, the sector supplies high quality fiber, silk, honey, fruits and vegetables, and wool products.

The primary issues and constraints countries and regions face in the process of reform in the agriculture and livestock sectors in ECO Countries may be identified as the following: 1: Lack of an adequate institutional framework for implementing the reform policies, Extremely limited capacity for policy analysis to provide technical support in policy-related decision making, 2: Macro-economic constraints, 3: Limited availability of information, especially on cost of production of crops and livestock for making farm-level decisions on production and marketing fronts, and 4: Existing food security policies aimed at enhancing self-sufficiency at the expense of the long-term efficiency of resource use, and comparative advantage in the production of different commodities in these countries.

Pomfret (1997, 1999) discussed the prospects for regional integration within the Economic Cooperation Organization (ECO) focusing more on newly liberated central Asian States. He states that there are good prospects for regional integration within ECO. Transport links would result in improved trade between the new landlocked ECO members and the three original members as previous distortions are removed. The prospect of substantial intra-ECO trade is limited because the economics of seven new members of ECO are similar. In Pomfret's 1997 study, ECO: Current Status and Future Prospects (Pomfret, 1997), Pomfret has discussed pre-ECO trade patterns and organisational history in the light of goals set by RCD and ECO for regional cooperation. He has also analysed exports and imports among ECO member states and analysed the growth and decline in terms of percentage. His focus remains on new seven members of ECO and not on Pakistan, Iran and Turkey. In his 1999 study, Central Asia Turns South, Pomfret reviewed the political and economic history of each member states and their trade links with each other.

Pervez (1974) examined the data available on trade flows among RCD countries without applying any economic model. Much of his focus remains on the historical aspects of the organisation and its member states. He has highlighted the areas of cooperation in the ECO region and what benefits the region can get from those areas. (Pervez 2004) states that the performance in the post-ECO period is not very different from pre-ECO situation. If things remain as they are today, the fate of ECO will be no different from the fate of its predecessor organization i.e. RCD.

Not many studies are available that discuss the possible economic integration among ECO countries. Even the studies mentioned above do not provide an analysis through proper economic indicators or modelling. The ECO became complete in 1992 with the inclusion of new Central Asian states. It is a new organisation as compared with other regional groupings and accounts for a very limited number of empirical studies.

## **5. ECO PROGRESS TOWARDS TRADE LIBERALISATION**

### **5.1. ECO Trade Agreement (ECOTA)**

The main thrust of the work in the field of trade liberalisation has been towards the reduction of tariffs and removal of non-tariff barriers in the ECO region. While trade does not obviate the need for large scale supported development investments, an open and equitable trading system can be a powerful driver of economic growth in the ECO region, especially when combined with adequate political support. Therefore, implementation of ECOTA and relevant trade facilitation programs rightly lies at the heart of the trade development in the region. The ECO countries strive to dismantle market access barriers and begin phasing out trade-barriers in the region in order to pave the way for free-trade area.

ECOTA was signed by five Member States during the 2nd Ministerial Meeting on Commerce/Foreign Trade, held in Islamabad, Pakistan on 17 July 2003. Since then, the ECO Secretariat is pursuing for its implementation in the region through urging Contracting Parties to expedite ratification process and approaching to non-signatory Member States to be Party to it as soon as possible. This agreement will enter into force after the date of receipt of the instrument of ratification, acceptance, or approval from five Contracting Parties. Amongst the Contracting

Parties, so far, only Pakistan and Tajikistan have ratified the said Agreement. Some member states are negotiating on adopting a fast-track approach which foresees further reduction to the highest tariff slab from 15% to 10% within five years time instead of eight years.

The 1st High Level Expert Group (HLEG) meeting on Trade and Investment, held in Ankara, Turkey on January 13-15, 2004 recommended adopting a "Fast Track Approach to ECOTA". Although, signing of the Protocol on fast-track was included in the agenda of the 3rd Ministerial Meeting on Commerce/Foreign Trade (July 7, 2005) held in Istanbul, Turkey, it could not be realised due to some reservations raised. The 4<sup>th</sup> HLEG meeting to be held on 9-10 November, in Kabul, will resolve controversial issues so that the Member States could sign the Protocol at the earliest.

The 3rd Ministerial Meeting on Commerce/Foreign Trade approved and signed a "Protocol for the annexes of ECOTA on (i) ECO Rules of Origin (ii) Anti-Dumping Measures, (iii) State Aid, and (iv) Intellectual Property Rights". The said Protocol was signed by four Member States, i.e. Afghanistan, Iran, Pakistan, and Turkey. Moreover, Pakistan has already ratified the said Protocol. This achievement will facilitate signature/or ratification process of ECOTA with its annexes by the Member States.

## **5.2 Trade Facilitation**

### ***5.2.1 Transit Trade Agreement (TTA) and Transit Transport Framework Agreement (TTFA)***

The TTA was signed in 1995 (except Afghanistan and Uzbekistan) and ratified by all the signatory member states. It is not fully implemented. Initially, in face of difficulties for new ECO member states to become a party and implement the TIR Convention, TA aimed to facilitate trade between two member states via transit through other member states. It is applicable to road, railway, sea, air or any combination of them. Goods transported under the Agreement are not subject to import/export duties and taxes. Guaranteeing Associations undertake to pay duties/taxes and default interest due under the customs law/regulations of the country in which an irregularity has been committed. Goods shall not be subject to examination through Customs en route. Customs offices will accept the validity of ECO Passage Document in order to avail facilities under the Agreement. Guaranteeing Associations will act as the guarantor of the transit system. Transit Trade Committee comprising of one representative from each signatory member state will monitor the implementation, make procedures, and resolve any disputes arising out of the operation. Guaranteeing Associations have been nominated (except by Azerbaijan and Turkmenistan). ECO Passage Document has been finalised (except Authorisation for Natural and Legal Persons to utilise EPD). Technical standards of vehicles have been approved. ECO Road and Railway Maps have been prepared, to be approved by the member states.

Prospects and challenges for TTA are: (i) minimum conditions and requirements (i.e. authorisation) for natural and legal persons to utilise EPD shall be adopted by the member states; (ii) printing, distribution, and monitoring of EPD; (iii) establishment of a Regional Guarantee System which will ensure that all duties and taxes are covered either by the transport operator or by the national guarantee associations of the Member States; (iv) capacity building in Guaranteeing Associations; (v) activation TTC for monitoring the Agreement; (vi) collecting data on transit volume, clearance time and problems; (vii) involving freight forwarders and transporters and ECO Chambers in implementation of the Agreement.

Other physical and regulatory requirements can be summarised as: (i) improvement of facilities and infrastructure in border crossings ; (ii) alignment of working hours in border crossings; (iii) simplification of customs transit procedures; (iv) harmonisation of technical requirements of vehicles; (v) reducing high and diverse transit charges; (vi) making transit rules and procedures transparent and stable. 8. Implementation of Transit Transport Framework Agreement (TTFA) which was signed in 1998 is other important issue. TTFA being in line with current developments that more and more ECO member states strive is ready to become a party to the TIR convention, in time, has gained an upper hand over TTA and now preference is given for its early implementation. However TTA is not shelved until the TTFA enters fully into power. TTFA covers

all modes of transportation including insurance and other related issues. The Secretariat has emphasized on the importance of the ratification of this agreement in several meetings as well as in its contacts with the relevant officials of the Member States. So far, five member countries namely Azerbaijan, Kazakhstan, Kyrgyzstan, Pakistan, and Tajikistan have ratified the agreement. Afghanistan unofficially has informed the Secretariat about ratification of TTFA in that country. In addition, the Secretariat has requested the Member States to introduce their nominees for Transit Transport Coordination Council (TTCC), which will monitor and follow implementation of TTFA. Azerbaijan has recently agreed to be the coordinator country for the implementation of TTFA (Isik, 2005).

### **5.2.2 ECO Customs Cooperation**

Customs and Transit Trade cooperation also plays an important role in the economic cooperation among the ECO Member States. The 4th meeting of the ECO Council of Heads of Customs Administration (CHCA), held in Baku, Republic of Azerbaijan, on May 16-18, 2005 finalised the text of the draft Agreement on establishment and operation of the ECO Smuggling and Customs Offences Data Bank. The said Agreement was approved by the Member States and initially signed by Afghanistan, Pakistan, and Turkey during the 3rd Ministerial Meeting on Commerce and Foreign Trade. Recently, we have acknowledged the willingness of Kyrgyzstan to sign the said agreement. This Agreement would come into force upon signature/ratification of at least four ECO Member States. To this end, an action plan will be prepared in coordination with Turkey (host of Data Bank) leading to the operation of the Data Bank.

The 4th meeting of ECO-CHCA also reviewed a UNDP Consultant report on simplification and harmonisation of customs procedures and agreed to form a working group of experts to further consider actions on the recommendations of the Consultant. Cooperation with WCO within the framework of MOU signed between ECO and WCO, cooperation with ADB and customs cooperation among the ECO Member States were also reviewed during the said meeting. Member States were requested to provide their customs news/material to Islamic Republic of Iran Customs Administration (IRICA) on regular basis for publication in the ECO Customs Newsletter. The Council elected the Head of Turkish Customs Administration as its next Chairman and the First Deputy Chairman of State Customs Committee of Azerbaijan as its Vice-Chairman.

Exchange of updated data/information relating to trade and investment among the ECO Member States has gained special significance. In this regard, ECO has held several seminars. The 3rd ECO Seminar on Trade and Investment Information Networking held in Karachi, Pakistan on 31st January-01 February 2005 was the latest. In this Seminar, ECO Member States actively participated and agreed to designate fresh Focal Points on Trade and Investment for prompt exchange and presentation of relevant data/information through the interactive ECO Web portal ([www.tradeeco.org](http://www.tradeeco.org)), which was developed with financial assistance of UNDP. The said Web portal is being upgraded time-to-time taking into account the recommendations of ITC Expert who participated in the abovementioned Seminar. Moreover, utilisation of ECO Feasibility Fund is being proposed to Council of the Permanent Representatives (CPR) for this purpose.

There is an urgent need to follow the effective implementation and further updating/expanding the scope of the agreement on simplification of visa procedures for the businesspersons of the Member States to further facilitate the contact and communication among the citizens of the Member States. In this regard, the CPR approved that the Islamic Republic of Iran, as a coordinator, to host the 1st Experts Group Meeting (EGM) to revise the Agreement on Simplification of Visa Procedures for the Businessmen of ECO Member States.

### **5.2.3 Harmonisation, Standardisation and Recognition**

The enforcement of industrial standards in the region in line with the international standards and improvement of quality management systems according to International Standards Systems (ISS) is another priority area that is highlighted in the ECO Plan of Action for Industrial Cooperation. In this regard, the Republic of Turkey, in collaboration with the ECO Secretariat, organised a



Workshop on Standardisation, Conformity Assessment, and Accreditation for ECO Member States on 25-26 August 2004 in Ankara. The First Experts Group Meeting on Standardisation, Conformity Assessment, Accreditation, and Metrology was held in July 2005 in Istanbul and finalised the draft Statute of the ECO Regional Organization for Standardisation, Conformity Assessment, Accreditation and Metrology (ROSCAM) and the draft Regional Cooperation Strategy for ROSCAM. The First Meeting of the Heads of Standardisation Organizations was held in 2005 in Tehran which considered the above-mentioned Statute and Strategy.

#### ***5.2.4 Other projects / Programmes***

##### ***ECO/ITC Project for Trade Promotion***

The ECO/ITC launched a joint project aimed at expanding intra-regional trade. The Project's primary focus was on identification of trade opportunities in the regional creation of an enabling environment for their ultimate realisation by bringing together buyers and sellers of selected product groups. ECO/ITC have already completed the first cycle of the project i.e. carried out a Trade Flow Analysis, held a Product Selection Workshop, prepared a priority list of products, conducted Supply and Demand Surveys in respect of the selected product, held three Buyers/Sellers Meetings, and organised a Business Forum. The 2nd phase of the project will also start in near future. The Member States have endorsed the utilisation of US\$ 50,000- out of ECO Feasibility Fund with the contribution of other donors for the said project. Devising a regional trade and investment strategy and capacity building of ECO-CCI will be at the core of the 2nd phase of the project (Isik, 2005).

##### ***ECO Chamber of Commerce and Industry***

Since April 2004, ECO-CCI Chairmanship is with the Afghan Chamber of Commerce and Industry (ACCI). The aim is to make ECO-CCI an effective body of ECO through reactivating ACCI with the technical support of Member States. The Trade and Investment Conference, 10th Executive Committee Meeting of ECO-CCI, and ECO-CCI

Trade Fair was held in Kabul, Afghanistan on 9-10 November 2005. The ECO-CCI, Afghanistan Investment Support Agency (AISA) and Ministry of Commerce of the Islamic Republic of Afghanistan are actively working for efficient convening of these events in a befitting manner with the assistance of international agencies/organizations based in Kabul.

The First ECO Business Forum was held in October 2002 in Istanbul. Keeping its importance in the promotion of trade and business activities in the region, the Business Forum will be institutionalised and its meetings are to be held on a regular and rotational basis.

##### ***Investment Promotion***

It should be stressed that ECO countries, particularly the landlocked Member States, which rely on a few commodity products and trade routes, also face supply-side problem, which manifests itself in a lack of capacity to diversify exports, a vulnerability to price fluctuations and a decline in terms of trade. Therefore, in order to build trade competitiveness, recently finalised ECO Agreement on Promotion and Protection of Investment among Member States should be implemented towards promoting investments projects in sectoral productivity, particularly trade-related infrastructure, and competitive export industries. In fact, encouraging diversification, and reducing vulnerability to commodity price fluctuations, where support for them in the region has fallen far short of what is necessary.

ECO Trade and Investment Conference held in Kabul, Afghanistan on 9- 10 November 2005. The main theme of Conference was "Private Sector Promotion in Afghanistan and Regional Development". Besides the delegations from member states, the representatives of ITC, ADB, IDB, UNDP, UNCTAD, UNESCAP, and other relevant regional/international organizations participated in this Conference.



### ***ECO Trade and Development Bank & ECO Reinsurance Company***

Iran, Pakistan, and Turkey are the signatories to an Agreement for the establishment of the ECO Trade and Development Bank (ECO-TDB). This agreement was recently ratified by the Parliament of the Islamic Republic of Iran. Thus, completion of ratification process by three signatory Member States will pave the way for the establishment of the Development Bank. It is expected in the near future the announcement of the 1st Meeting of the Bank's Board of Governors, payment of the initial instalments of the Bank's capital, appointment of the president and directors of the Bank and the preparation of the Business Plan.

Iran, Pakistan, and Turkey are also signatories to a Memorandum of Understanding on establishment of the ECO Reinsurance Company but the Articles of Agreement of the Reinsurance Company remain to be signed. The lacunas pointed out by Islamic Republic of Pakistan and Republic of Turkey in the Draft Articles of Agreement for the establishment of ECO Reinsurance Company, were considered/discussed in the joint Trilateral Interim Committee (TCI) meeting held at the ECO Secretariat, Tehran, on February 17, 2005 and most of them were removed. 21. ECO is in need of more permanent body like a trade facilitation working group comprised of representatives from both the government and private sector to raise issues and work towards solutions (Isik, 2005).

## **6. CONCLUSION**

ECO is a young organisation. Despite its achievements, it is passing through a critical phase. Virtually all its member states are committed to the ECO objectives and goals. ECO is well entrenched. An increasing number of countries and regional organizations are showing interest in building links with it. Member states remain politically sensitive to its success as a vibrant regional organization. Within their scarce resources, they are making all possible efforts to harmonize their incompatible rules and regulations which is a laudable exercise. By harmonising regional development strategies, reducing non-tariff barriers and evolving a common regulatory regime for cross border flow of capital, goods and persons the region can be developed and integrated with global markets. The impact of globalisation has been evident in the region with increasing inter- and intra-regional trade. This has stimulated a demand for development of infrastructure, creating new financing challenges, and increasing the focus of the governments on efficiency and integration of all transport modes.

However, the fact remains that the realization of goals and objectives would require a massive amount of finance and continued international support. ECO has used its growing relations with IDB, UNDP, ITC, UNESCAP, FAO, UNDP and UNCTAD to strengthen the activities and stimulate further progress. The restoration of peace and security in Afghanistan and Pakistan, and the resolve of international community for reconstruction work there have opened a new opportunity for ECO to play its due role as a regional organization. What is lacking in ECO region is the infrastructural and institutional ability to make use of the available resources. The bottlenecks in physical infrastructure, institutional and human resource capacity constraints and limited experience with global market place limits to the implementation of already agreed ECO programmes and plans of action.

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## TEACHING STRATEGIC MANAGEMENT: MOVING FROM CASE ANALYSIS TO APPLIED RESEARCH

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### ABSTRACT:

*Strategic Management is usually taught as a fourth year capstone course in undergraduate business programs, or the final course in MBA programs, at colleges and universities across North America. While the strategy course comes under a number of monikers, including Strategic Management, Business Strategy, and Business Policy, the intent is similar, which is to tie together into one coherent package the various concepts learned throughout the students business education in disciplines such as accounting, finance, management, marketing, human resources, operations management, and the like. Often these capstone courses are taught using a case study methodology, whereby a specific topic from the strategy course is looked at in detail through the lens of a comprehensive case study dealing with the issue. This article proposes an alternative methodology for teaching capstone courses like Strategic Management, through the use of applied research.*

**Key Words:** *strategic management, business strategy, business policy, capstone course, applied research, case studies*

### 1. INTRODUCTION

In many ways, this paper reflects an evolution in the author's thinking in the teaching of a business program's capstone course, Strategic Management. Given the personal nature of this development, this article will use the first person tense, rather than the third person singular tense typically found in journal articles.

I first taught Strategic Management in 1994-95, about three years into my academic career. For the first twelve years of teaching this course in different colleges and universities I followed a format of case-based learning, where for each class the students would read and prepare answers for a comprehensive case study, which dealt with a "real life" situation that was used to discuss the topic of the day (Garvin, 2003). The in-class discussion typically would entail a discussion of the case, with the professor grilling the students on their answers, challenging them to look at things in a different light, then ultimately grading their analyses of the case studies.

I began questioning the continued use of the case studies as the primary teaching methodology when I took on several executive roles in academic institutions and business settings. As I worked with business people who had graduated from different business programs from across North America, including some of my own former students, I found that they were very good at analyzing business issues and strategies, but not particularly good at formulating strategy; more specifically, these very bright, articulate individuals had never been taught the process of actually putting together a strategic plan for an entire organization. In addition, I found that these business people often tended to think in discipline specific silos, such as accounting, marketing, human resources, etc., rather than viewing strategy, and strategic planning, as the process of thinking cross-discipline concurrently.

I have also observed with the consulting projects I have taken on that there are a number of organizations that struggle in this area of strategic planning. While the companies often do a credible job with their market analysis and financial analysis, and are able to come up with a strategic plan for the next five years, I have noticed that they rarely have done a thorough analysis of their organization to determine if they have the wherewithal internally to actually achieve their goals and objectives. Moreover, the action plan for implementing the strategic plan is often missing or ill conceived. Little wonder so many researchers have found companies have a poor record of implementing their strategic plans, and achieving their goals and objectives, for a variety of reasons (McConkey, 1988; Allio, 2005; Economist, November 2004; Stonich, 1981).

With this as a frame of reference, about four years ago I began fundamentally rethinking the strategic planning process in an organizational setting, and how best to teach students both a macro-view of strategy, and in turn, how to actually implement a strategic plan on a micro-level within an organization. Where I landed was to actually get students to work through the strategic planning process for an organization of their choosing, with the intent of learning how organizations and the marketplace are analyzed, and how strategic plans are conceived and executed.

As a result, the purpose of this paper is to guide the reader through the applied research project, in the form of a consulting project, that the students take on in the capstone Strategic Management course. Specifically, this paper will address the following topics, which make up the four-part process of developing a strategic plan:

- Organizational Analysis
- Market Analysis
- Financial Analysis
- Five-year Strategic Plan

It should be noted that while I have moved away from using case studies as the major teaching tool in Strategic Management, I still use case studies during class to illustrate issues. Probably the biggest difference is that the case studies are no longer the major assignments for the course, rather the major assignments for the course are the four parts of the consulting project described above, plus a group presentation of the strategic plan for the company at the end of the semester.

## **2. TEACHING THE STRATEGIC MANAGEMENT CAPSTONE COURSE**

By their very nature, capstone courses should tie together many different types of content from the student's undergraduate, or graduate, business education into a coherent format, which should allow the student to gain an understanding and appreciation of how these seemingly divergent disciplines come together to allow a company succeed in moving forward. For this to successfully come together, I have found the students require the following prerequisites to be completed before taking the Strategic Management capstone course:

- Financial accounting
- Management accounting
- Corporate finance
- Marketing management
- Organizational behavior
- Organizational theory and design
- Operations management
- Business law

It is not unusual to find these disciplines being taught over several semesters in a variety of courses to adequately cover the breadth of materials required to ensure a sufficient level of competence. As a result, it was found that the Strategic Management course should be the final course students take in their undergraduate or MBA programs, to ensure they have the breadth of knowledge necessary to bring all these disciplines together when analyzing the company they have chosen for their final project.

### **2.1The In-Class Experience**

The in-class portion of the course is usually taught once a week in a three-hour time frame, over a thirteen-week semester. The lecture content and classroom discussions are covered over the first 10 weeks of the semester, with the last three weeks of the semester being held for the in-class group presentations of the strategic plans.

It is assumed that the students have sufficient levels of competency in the subject areas covered in the pre-requisites listed above, which provides the necessary background to produce the first three parts of the comprehensive strategic plan they will be completing as part of the course requirements. As a result, the class time is spent on discussing in detail the contents of the actual strategic plan, and the various strategic options available to a leader of an organization.

The content covered in-class is broken down into the sections listed below. There is really nothing new here that is not covered by most professors teaching Strategic Management courses, and covered in most strategic management texts (i.e. David, 2010; Thompson, Peteraf, Gamble & Strickland, 2012).

- Section 1: Introduction to Strategic Management
- Section 2: Business Vision and Mission
- Section 3: Analyzing the External Environment
- Section 4: Analyzing the Internal Environment
- Section 5: Strategy in Action
- Section 6: Analysis of Strategic Options, and Making Strategic Choices
- Section 7: Implementing Strategies – Part One – Management and Operational Issues
- Section 8: Implementing Strategies – Part Two – Marketing, Finance, IT Issues
- Section 9: Strategic Review – Evaluation and Control Issues

At the beginning of the semester the students form self-selected work teams. The teams work on both in-class assignments together, and on their major project together. Working in teams has several benefits for the students: 1) the major project is a huge undertaking for one individual, so spreading the load out amongst the team members certainly eases the burden; 2) in a modern business environment teams are a fact of life, so the students are able to gain some valuable experience in working within this context; and 3) the in-class work experience gives the students the opportunity to learn to work together, which undoubtedly helps build the working relationships for the major project.

At the beginning of the semester, these teams are assigned a company from whatever industry the professor has chosen, such as an automotive company (i.e. Toyota, Ford, BMW, etc.), or a restaurant chain (i.e. McDonald's), then throughout the semester during the class the students will apply what they have learned about the topic of the day from the lecture to their assigned company. For example, if the topic of the day were developing a vision and mission statement, then the students would develop a mission and vision statement for the company they have been assigned. It should be noted that the companies the students have been assigned for the in-class assignments is not the same company that they will be using for their consulting project.

## **2.2The Major Project**

The students, working in self-selected groups of 2 or 3 people, work their way through the process of developing a comprehensive strategic planning document for an organization of their choice. The various components of the project are submitted in the form of a consultant's report. The individual parts of the major project are handed in usually in 4-week increments throughout the semester, then a complete package of all of the parts of the consulting project is handed in before the final oral presentation.

I do not recommend forming groups of more than three people, as inevitably the fourth person in the group ends up putting in a minimum amount of effort, much to the chagrin of the other team members. The project is very doable by two people, and the third person works fine. However, I have noted the dynamics of the teams and the workload changes when the fourth person is added.

A word of caution at this point, based on some personal experiences, be very careful about allowing students to choose their parents' company for their analysis. Early on in the process of moving the course from a case-based format to an applied research format, one of the student groups chose one of the father's companies for their analysis. The students were quite sharp in their critique and analysis of the father's company, and in turn showed the father the report before they had handed it in to me for grading.



If they had handed it in to me first, I would have had them soften some of their criticism and analysis, and recommended greater diplomacy in what they had to say. Often in consulting, one can say almost anything to a client, but you have to be diplomatic in *how* you impart whatever negative information needs to be conveyed to the client. Unfortunately, in this case the students were blunt, to the point of being crass, which resulted in a very upset parent who was ready to disown his offspring. It took a few meetings with the parent to calm him down, and it was certainly a teachable moment for the students working in that group. It, however, has become a great example for students when choosing the company on which they would like to do their consulting project. That being said, every semester at least one group chooses their family's business for analysis, and the result tends to be very positive and appreciated by the parents, as they have a solid piece of research and analysis that has been performed on their company.

### 2.2.1. Part One: Organizational Analysis

After learning the theories and concepts in their business studies at the university, the groups are tasked with performing an organizational analysis for the organization they have chosen; this is the first part of the report. The contents of this report are very similar to what an actual consultant would do when analyzing a company. Specifically, the organizational analysis entails and in-depth examination of the company along the following dimensions (Daft, 2006):

- Structural Dimensions, which describe the organization's levels of formalization, specialization, hierarchy of authority, centralization, professionalism, personnel ratios, etc.
- Contextual Dimensions, which characterize the organization's size, organizational technology, external environment, internal environment, goals and strategies, culture, decision making processes, internal politics, etc.
- Performance and Effectiveness Outcomes, which considers issues of efficiency versus effectiveness, stakeholder needs, innovation, change management, etc.

The report itself, as mentioned previously, is written single-spaced in the form of a consultant's report, including a title page, table of contents, executive summary, headings, citations (using endnotes), a bibliography, appendices, etc. The goal is to have a professional looking report, rather than a typical academic document. The topics covered in the organizational analysis include:

- Organizational strategies
- Organizational design and effectiveness
- Organizational structure
- External environment
- Internal environment
- Organizational design for an international environment (if applicable)
- Products and services being offered
- Information technology and control systems
- Organization size, life cycle, and possible decline
- Organizational culture
- Ethical values
- Innovation and change
- Decision making processes
- Conflict, power, and politics
- Summary of key findings

Some students try to take the easy way out on this analysis, and just provide information on these areas that is easily found on a company's website. These students need to be reminded that a company's website is more often than not an exercise in public relations, which shines the best possible light on everything the company does. Thorough analysis requires going to secondary, and even tertiary, sources for information to provide a broader perspective of the company. The students also have to be prompted to not only describe *what* the organization is doing in each of the areas listed above, but also to analyse *how well* they are doing in each area, which includes looking at how the competition might be doing.

Typically, the main body of the organizational analysis is 20-25 pages in length, excluding the title page, table of contents, and appendices. I will usually be quite tough on the students when grading this first assignment, not only in terms of the quality of the content, but also on the grammar, sentence structure, layout, and the professional look/feel of the document. I have come to the conclusion that I do the students no favors by going easy on them in these areas since when they enter the workplace there are high demands for excellence in everything they do. The benefit for the professor in being tough in grading the first assignment is that the quality of the following assignments is usually very good, which makes the marking that much easier for the professor!

### **2.2.2. Part Two: Market Analysis**

The student's prior exposure to market analysis varies greatly, depending on who taught the marketing course(s), which university they took the course, and what their major was in their business program. Some students, such as accounting majors, often have taken just one introductory marketing course in their program of study, whereas others have extensive background in marketing. Because of this discrepancy, I have found that it is necessary to be fairly prescriptive in what I am looking for with the market analysis. Listed below are the items that must be considered by the students in completing the market analysis (Crane, Kerin, Hartley, & Rudelius, 2011; Kotler & Turner, 1995; Matulich, 1997).

- Summary of the Market: provides a brief overview of the characteristics of the market for those with no knowledge of the company's market;
- Industry Analysis: looks at the size of the market, current market share and percentage the company wants to capture, growth prospects and implications for the company's market share, longer term – how do they plan on expanding their markets, and what role does the international marketplace play in the company's future;
- Target Market: defines the target markets by determining factors such as population, the level of business activity, and the geographic region(s) being focused on;
- Customer Profile: determines who is going to use the company's products or services, what they will use it for, and why they buy the product or service. This section also provides a demographic description and lifestyle description of the typical customer, if there is such a thing;
- Major Competitors and Participants: provides a summary of the competitors and participants in the industry, including a look at comparable size, profitability levels, competitive advantages of the competitors (if any), strengths and weaknesses of competitors, the emergence of new competitors, competitiveness of the market, barriers of entry;
- Market Segmentation: looks at how the market is currently segmented, looks for potential profitable niches;
- Projected Market Growth and Market Share Objectives: looks at market forecasts for the industry supported by public, private, and industry economic data and market reports;
- Product and Service Offerings: briefly describes the products and/or services being offered by the company, as well as the benefits of these products to the end user;
- Product and Service Uniqueness: describes the unique products or services offered to the consumer, and why the consumer will purchase this product or service rather than those of a competitor, what differentiates the company's product or service;
- Competitive Comparisons: briefly describe the competitor's products for each of the products or services the company offers using a comparative grid;
- Research and Development: discusses the company's R&D process for new products and services; existing product extension; the R&D budget and any plans for significant changes in R&D expenditures; R&D priorities; what competitors are doing in R&D, etc.;
- Patents and Trademarks: describes any patents or trademarks that have been issued for the company's products; does the company have full assignment of this intellectual property; are there licensing agreements in place or being considered; is the company licensing technology or patents from another company; etc.

By being this prescriptive in the requirements the quality of the papers tends to be fairly decent. The marketing majors usually go above and beyond the requirements on the report, whether it is because of their love of the subject matter or to show-off is up for debate. The accounting students tend to be far less verbose; their mindset seems to be more one of, "Why use a paragraph to describe something when a single sentence will do perfectly well?" As a result, it is a bit more of a challenge to get the accounting students to expand on their analysis. Between the two extremes of the marketing and accounting students, the remaining students do a decent job in their analysis and in being sufficiently expansive in their narrative.

Once again, this paper is written in the form of a consultant's report, including a title page, table of contents, executive summary citation, bibliography, tables and charts where applicable, and a summary with a list of recommendations.

### **2.2.3. Part Three: Financial Analysis**

The financial analysis of the company is largely dependent on an analysis of the financial ratios. The following ratios are computed for the company's most recent three-year fiscal periods. In addition to analyzing the ratios, the students are required to enter into a comprehensive discussion about the implications of this data for the company.

Cash assessment:

- Working capital
- Current ratio
- Quick ratio
- Accounts receivable turnover
- Inventory turnover
- Payables turnover
- Cash from operations

Profitability assessment:

- ROE
- ROA
- Profit margins
- Asset turnover

EPS:

- Gross profit margin
- Operating income margin
- Income before tax margin

For each ratio the students are required to: 1) briefly describe what the ratio means; 2) explain how well the company is doing with the ratio compared to industry averages; and 3) explain what the company needs to do if it is underperforming with that ratio. If the organization the students are analyzing is a non-profit, certain of these ratios will not apply; in that case, the student must then explain why the ratio would not apply in their case.

Generally speaking, the financial analysis is often the most solid piece of analysis out of all the parts of this major project. While the students come from a variety of areas of specialization in their business programs, they usually have a good grasp of ratio analysis and the implications for the company, which is likely attributable to the professors teaching in the accounting/finance area. If there is one area of weakness with undergraduate students in the ratio analysis is that they are good at pointing out areas of financial problems, but often do not have the business acumen to tell the company how to fix the problem. Figuring out how to fix the problems usually comes with experience, and scar tissue.

#### **2.2.4. Part Four: Five-year Strategic Plan and Action Plan for Implementation**

From the data collected in the first three parts of the report, the students are now required to develop a five-year strategic plan for their organization, including a five-year pro-forma budget. The document must also include an action plan for implementing the strategic plan. The topics and headings to be covered in the strategic plan include:

- Title page
- Table of contents
- Executive summary
- Vision and Mission
- External Environment Analysis
- Internal Environmental Analysis
- Market Analysis
- Positioning organization in the marketplace
- Long-term Goals/Objectives
- Strategic Options and Choices
- Action Plan
- Measure and evaluation of performance
- Five-year pro forma operating budget

The information the students provide in the sections listed above, from the beginning down to the positioning of the organization in the marketplace, will largely be a summary from the organizational analysis, marketing analysis, and financial analysis. The last five topics listed above really the substance of the strategic plan.

In the long-term goals/objectives section of the plan, students are required to outline 3-5 key goals or objectives that they would like to see the organization accomplish over the next five years. In the strategic options and choices section, the students propose several potential strategies that could help the organization meet its goals and objectives, and then they are required to analyze the choices by outlining the pros and cons of each choice. Finally, out of the list of strategic options that have been outlined, they must decide which of these options they would recommend the company to implement over the next five years.

The action plan briefly outlines the steps for implementing the strategic choices that have been recommended over the next five years. The measurement section describes how the students intend to measure the company's progression in achieving the goals and objectives that have been outlined. And finally, the five-year pro-forma budget is basically an income statement for five sequential years moving forward.

#### **2.2.5. Part Five: Presentation of the Strategic Plan**

In this final part of the project, the students are required to make a formal 15-20 minute presentation of their strategic plan for the company in front of the class. The presentation is graded as follows:

##### **Presentation Delivery: /3 points**

- The presentation was professional
- The order of points was logical and easy to follow
- The main points were developed with appropriate detail and support
- Any presentation aids were used with comfort
- The presentation was completed within the time frame

##### **Organizational Assessment: / 5 points**

- General information was given about organization
- Mission and vision (organizational goals)

- Internal assessment
- External assessment
- Market analysis

**Strategic Plan: / 4points**

- Organizational Objectives/Goals
- Strategic alternatives
- Analysis of options
- Choices made

**Action Plan & Evaluation: / 3 points**

- Systematic plan of action
- Logical plan of implementation
- Systematic review of progress

### 3. SOME FINAL THOUGHTS AND COMMENTS

I will usually include a final exam as part of the evaluation criteria. Initially, I did not include a final exam as part of the course, but after the first year I decided to include one due to feedback from students who were reporting back to me that some group members were not contributing equally to the output of the group. In fact, some students were getting a “free ride” on the coat tails of their fellow group members, by expending minimum effort to gain a maximum grade. A final exam was one way of testing each of the students to see if they truly were grasping the concepts and content of this course, without the help of their fellow students, which has certainly singled out the underperforming students.

The other policy that I have created to deal with the students who are not carrying their weight in the group project is to give the ability to any group to fire a group member who is: 1) not contributing equally to the group’s efforts; 2) not attending scheduled group meetings; and 3) handing in substandard work that needs to be rewritten or heavily edited by other group members. If a group member is fired from his/her group, he/she will receive a zero for the entire project, and fail the course. While students are typically very hesitant to exercise this option, given this being a required course to graduate, inevitably every year one group ends up firing a group member. The students are warned about this on the first day of the class, and reminded of it throughout the semester. Usually if a group is having a problem with a group member they come to see me first. I insist that the group confront the individual group member first before further action is taken, then I will meet with the student and explain to him/her the consequences of his/her actions, or lack thereof. Most students take the warning seriously and make a significant improvement in the quality of their work and their participation in group activities. However, every year there is at least one student that decides to ignore the warning, and pays a heavy price by failing the course.

As mentioned at the beginning of the paper this is now the fourth year of offering the Strategic Management course using this applied research format. The quality of the reports has steadily improved year to year, and the feedback from both students and businesses has been very positive. I have been encouraging the students to take these reports to their interviews with businesses upon graduation to show the companies the quality of work they are able to deliver. To date, over 20 students that I am aware of have been hired on the basis of the quality of their comprehensive strategic plans. That, in itself, is a strong endorsement of this alternative methodology of teaching the strategic management capstone course. I would encourage you to consider giving it a try.



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# KNOWLEDGE MANAGEMENT CAPABILITIES IN OPEN INNOVATION: AN EMPIRICAL STUDY

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## ABSTRACT

*The discussion on open innovation often focuses on the inbound processes of knowledge transfer neglecting its important outbound component. Naturally, interactions between inbound and outbound aspects have hardly been investigated. In this study we provide empirical evidence on the existence of different inbound and outbound capabilities in the exploration, retention and exploitation of knowledge. Survey data shows that these dynamic capabilities have a significant impact on performance. Higher-order factor modeling indicates complementarity of inbound and outbound knowledge management capacities. Thus, our results prove the benefits of an integrated approach to open innovation.*

**Keywords:** open innovation, knowledge management, higher-order factor modeling, SEM

## 1. INTRODUCTION

Innovation is the driver of success. However, shorter life-cycles combined with an increased complexity of technological innovations pressure companies to allocate their resources more efficiently. Consequently, instead of generating new knowledge solely internally, firms look beyond their organizational boundaries and acquire existing knowledge from external resources (Cassiman and Veugelers, 2006). The idea of opening firm boundaries to knowledge flows is generally referred to as *open innovation* (Chesbrough, 2003). Companies applying this concept concentrate internal resources on core competences and leverage their innovation activities externally. *Absorptive capacity* (Cohen and Levinthal, 1990) as the ability to manage the underlying inbound processes successfully has been intensively investigated (Jansen, Van Den Bosch, and Volberda, 2005; Lane, Koka, and Pathak, 2006; Zahra and George, 2002). However, R&D effectiveness is also determined by the outcomes from the commercialization of innovations. In this respect, only few companies tap their full potential. Most firms focus on the proprietary commercialization in existing markets rather than entering new markets through licensing or alliances. Associated risks discourage them to build up *desorptive capacity* (Lichtenthaler and Lichtenthaler, 2009) i.e., the ability to manage the process of outbound technology transfer (Lichtenthaler, 2005).

Despite academic interest, open innovation has not yet achieved recognition as a new theory. Originally intended as a paradigm, a framework for practice (Chesbrough, 2003), academic scholars started contributing to this concept. Lichtenthaler and Lichtenthaler (2009) suggest a framework that links open innovation to related fields e.g., organizational learning (March, 1991), knowledge management (Grant and Baden-Fuller, 2004), and firm boundaries (Santos and Eisenhardt, 2005). They claim six different knowledge management capabilities. These derive from the three organizational learning processes of exploration, retention, and exploitation that each can be managed with internal or external resources.

Based on this framework, our article contributes in three aspects. First, it empirically proves the existence of six separate capabilities on firm level based on an exploratory factor analysis. Second, the hitherto unclear interrelations of the proposed capabilities are verified using higher-order confirmatory factor analysis. Third, performance analysis shows that firms with a bi-directionally open approach to innovation are more successful than companies adhering to inbound transfer or even closed innovation. Altogether, the article provides an empirical basis for further research on the interrelated character of knowledge management capabilities in open innovation.

## 2. THEORY AND HYPOTHESES

### 2.1 Open Innovation

Chesbrough (2003) coined the term *open innovation*. Studying innovation processes at IBM and Procter & Gamble he concluded that the paradigm of *closed innovation* i.e., relying only on internal resource for R&D activities was outdated even for firms with large R&D departments. Concretely, according to Chesbrough, Vanhaverbeke, and West (2006), "Open innovation is the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively." The first aspect of this definition, the *outside-in process*, is practiced by many

firms (Chesbrough and Garman, 2009). Thus, several scholars have conducted empirical studies on inbound open innovation in different industry settings covering various national cultures (Fosfuri and Tribó, 2008; Laursen and Salter, 2006). Apparently, there are several benefits for firms: First of all, the access to additional and specialized resources shortens development times. Moreover, as innovations often originate from the ideas of customers and users are considered to be “one of the most important actors of a distributed (open) innovation process” (Piller and Walcher, 2006). *User innovation* constitutes a method that limits the risk of failed innovation. Also, collaborative innovation in alliances allows spreading costs for riskier innovation projects, quickly accessing new technological capabilities, and creating standards or dominant designs (Mowery, Oxley, and Silverman, 1996). Compared to these benefits the risk of becoming too dependent on external resources in R&D is perceived as marginal. In contrast, the implementation of the *inside-out process* is still the exception in practice. Likewise, the academic interest seems to be rather limited. But there is plenty of associated research on outbound knowledge transfer preferring other notations e.g., licensing, technology markets, and external technology commercialization/exploitation (Fosfuri, 2006; Lichtenthaler, 2005, 2008). The firms’ skepticism about outbound open innovation is based on the perceived unbalance of benefits and risks. In knowledge intense industries, selling intellectual property rights is often considered as selling the corporate crown jewels, strengthening competitors, and cannibalizing the own business. Given adequate appropriability regimes that protect intellectual property, companies do not need to fear an uncontrolled leakage of their knowledge (Teece, 1986). And besides the obvious direct monetary profit, there are other reasons to actively transfer knowledge (Lichtenthaler, 2005). Proactive licensing helps firms to promote and spread their technologies, ideally clearing the way to *standards*. *Cross-licensing* becomes common in high-tech industries as mutual knowledge exchange builds trust as it exposes both parties to the leakage risk. Also, it guarantees freedom to conduct R&D in fields where patent infringements are impending due to large patent pools. In addition, it has motivational character (Chesbrough, 2003). An inside-out process forces the marketing department to evaluate new ideas thoroughly. If good ideas are not recognized, competitors might take their chances. Although outbound open innovation is less common, longitudinal research shows a trend towards inside-out knowledge transfer (Poot, Faems, and Vanhaverbeke, 2009).

## 2.2 Knowledge Management Capacities

The traditional resource based view and derived theories like the knowledge based view (Kogut and Zander, 1992) do not explain competitive advantage in today’s turbulent environments (Eisenhardt and Martin, 2000). Clearly, dynamic capabilities lay at the heart of a company’s ability to innovate and to adapt to technological change through innovation (Hill and Rothaermel, 2003). Research on organization learning and knowledge management suggests three different knowledge management processes (Lichtenthaler and Lichtenthaler, 2009). Exploration deals with the creation of knowledge that is new to the firm. Retention describes the efforts of companies to retain knowledge over time embedding it in a repository. Exploitation pools the activities of knowledge application. Relating these aspects, Lichtenthaler (2011) developed a framework that defines “Open innovation as systematically performing knowledge exploration, retention, and exploitation inside and outside an organization’s boundaries throughout the innovation process.” Based on this definition, he identifies six organizational capabilities that a firm has to foster to be successful: three internal capabilities (*inventive*, *transformative*, and *innovative* capacity) and three external capabilities (*absorptive*, *connective* and *desorptive* capacity). These capabilities are of comprehensive nature and capture a unique set of knowledge management activities. Accordingly, each capability reflects two theoretically distinct aspects. *Inventive capacity* relates to a firm’s ability to create new knowledge with internal resources. Besides the actual generation of new knowledge, its integration in a company’s existing knowledge base is captured as well. In its established definitions, *absorptive capacity* comprises three to four stages that cover the entire process from identification of valuable external knowledge to the implementation in commercial applications (Cohen and Levinthal, 1990; Zahra and George, 2002). We use a more restricted interpretation and limit absorptive capacity to the process stages of acquiring external knowledge and assimilating it into the existing internal knowledge base. It reflects the definition of potential absorptive capacity (Zahra and George, 2002). *Transformative capacity* refers to a firm’s ability to retain knowledge over time within the organization. The framework uses the two process stages of maintaining knowledge and reactivating it when required. Accordingly, *connective capacity* describes the capability to externally maintain knowledge in interorganizational partnerships and reactivate this knowledge when required (Lichtenthaler and Lichtenthaler, 2009). In order to capture this distinction also terminologically, we term the two process stages relating knowledge

to external partners and leveraging external knowledge. *Innovative capacity* relates to the exploitation of knowledge by the firm regardless whether it was created or retained internally or externally. It corresponds with the exploitation aspect in the traditional definition of absorptive capacity, that is, realized absorptive capacity (Zahra and George, 2002). Innovative capacity comprises the two stages of transmuting knowledge and converting it into new applications. *Desorptive capacity* terms the firm's capability of exploiting knowledge outside the organization (Lichtenthaler and Lichtenthaler, 2010). Accordingly, desorptive capacity incorporates the processes of identifying external exploitation opportunities and transferring the knowledge to the recipient.

### **2.3 Complementarity of Knowledge Management Capabilities**

The theory of complementarities states that "an increase in the supply of one [factor] will increase the marginal utility of the other [factors]" (Hicks and Allen, 1934). This super-additive value of combinations are observed in different fields (Tanriverdi and Venkatraman, 2005). Within organizational learning, firms that manage to simultaneously explore and exploit are attributed as ambidextrous (O'Reilly and Tushman, 2008). Several researchers have shown that superior firm performance stems from this complementarities (Raisch, Birkinshaw, Probst, and Tushman, 2009). Rothaermel and Alexandre (2008) incorporated organizational boundaries: balanced deployment of internal and external resources explained superior performance and innovativeness. Yet, they did not apply an integrated process-based view on learning but distinguished between exploitation and exploration by asking if technologies were known or new.

Concerning the first aspect, it has been argued that internal and external resources are complements rather than substitutes (Chesbrough, 2003; Poot et al., 2009). Companies do not have make a general choice of "make-or-buy" rather than use internal and external resources in their project portfolio (Lichtenthaler and Lichtenthaler, 2009). We agree that on organizational level internal and external resources can be combined and do not have exclusive substitutional character. However, as to the theory of complementarities, we do not assume a complementary character of internal and external capabilities. External opportunities are pursued if they are beneficial in terms of lead times and financial aspects. Building up knowledge internally is time consuming and frequently more expensive than acquiring it externally. Strengthening ties to capable external partners might be more cost and time efficient than making knowledge available within organizational boundaries. Licensing technologies adds more value and can be realized in a shorter time than entering new markets with the own organization. Usually, external opportunities do not have super-additive character in the sense of complementarities. They can accompany or substitute each other having similar effects in total. The term of supplementarity has been used to describe this degree of overlap (Knudsen, 2007). Accordingly, we claim:

*Internal and external KM capabilities of the same process stage have supplementary character.*

*The pairwise combined internal and external knowledge management capabilities of the process stages knowledge exploration, retention, and exploitation have complementary character.*

## **3. METHODS**

### **3.1 Sample and Data Collection**

To investigate on Open Innovation empirically, we send invitation emails for our survey to a sample of knowledge-intensive German companies during the period October-December, 2011. Thereby, we focused on medium-sized firms in the manufacturing sector. Industrial companies have already been in the focus of previous studies on the complementarity of knowledge management capabilities (Cassiman and Veugelers, 2006). As to the increasing importance of the service sector, we included firms providing professional, scientific, and technical service. The mailing list was obtained from the database of the Association of German Chambers of Industry and Commerce including firms from various industries. To ensure knowledgeable respondents, we addressed key informants, that is, the CEO and senior management of the R&D and marketing department. All participants could choose to answer our questionnaire online or print return an offline version. We sent two reminder emails to those who had not yet replied after two and four weeks from invitation. After deleting some responses due to missing information, our final sample consisted of responses from 344 different companies, mostly filled out by the CEO. Concerning industries, manufacturing firms (65%) dominate our sample.



### 3.2 Measures

As to our knowledge, the integrated framework applied in our study has not yet been tested empirically. Accordingly, measures for all sub-constructs had to be defined. However, our study smoothly fits in the research stream of organizational learning as our multiple-item measures are based on prior related works. The items are specified as reflective indicator loadings. We verified the reliability and validity of the scales and pretested them with practitioners and researchers (Hair, Black, Babin, and Anderson, 2010).

**Independent Variables.** Lichtenthaler's (2009) earlier mentioned article provides process-based definitions for exploratory, transformative, and exploitative learning including the sub-measures that we mentioned earlier. We applied these items for absorptive, transformative, and innovative capacity respectively receiving the expected high levels of internal consistency. Concerning inventive capacity, we adapted items from the work of Yalcinkaya, Calantone, and Griffith (2007) and G. B. Voss, Sirdeshmukh, & Voss (2008). The items for the sub-scale knowledge generation measure how substantial the firm's R&D capabilities. In addition, the items for the subscale knowledge integration capture how related a firm's new research and its current knowledge base are. For connective capacity, we adapted the items of transformative capacity to external partners. Concerning desorptive capacity, we draw from the process-based items that Lichtenthaler (2008) developed. Finally, each sub-construct in our framework contains four to five indicators and demonstrates good reliability. For all items we applied seven point Likert-scale.

**Dependent Variables.** New product success was measured with six items adapted from (Paladino, 2007). The respondents were asked to rate their firm on revenues, profitability, and market share of their new products and services in comparison to their competitors and with regard to the firm's targets. Unlike other researchers, we decided against measuring innovative outcome via patent output. Patents only serve as a proxy for the ability to generate and market product innovations successfully (Mansfield, 1986). As the integrated framework of our study explicitly accounts for the outbound aspect of open innovation, we also included firm performance as a dependent variable in our model. We asked the respondents to disclose the firm's EBIT margin and indicate the growth rates for revenue and number of employees.

### 3.3 Analytical Procedures

For our data analysis, we conducted structural equation modeling using the software package AMOS 20. Several data tests were run to ensure validity. Testing for non-response, online-offline, and informant bias, we applied the tests of Mann-Whitney and the Kolmogorov-Smirnov (Armstrong & Overton, 1977). Non-response bias was ruled out by comparing early and late respondents. Based on response time, we split our sample into three groups and tested for significant differences between the average indicator values for the early and late respondents. T-tests indicated no significant differences. Similarly, online-offline as well as informant bias (CEO vs. other employees) were ruled out. Since our data was obtained from a single survey, we checked for common method variance with Harman's single-factor test (Lindell and Whitney, 2001). No single factor emerged from an exploratory factor analysis and no single general factor accounted for the majority of the covariance among our measures. In addition, we also evaluated potential common-method bias (Liang, Saraf, Hu, and Xue, 2007). The ratio of substantive to method variance indicated that our data was unbiased. After these validity pretests, we checked our propositions of higher-order factors and their complementarity. We conducted a confirmatory factor analysis and compared different model specifications (Hair et al., 2010). For this purpose, we analyzed three groups of alternative models in which our indicators represent factors of different order. We scrutinized theoretically meaningful models which are based on different order-levels of our framework. In group 1, we let our items form one, two, three, six, or twelve first-order factors. Group 2 consisted of twelve first-order factors that represented one, two, three, or six second-order factors. Finally in group 3, the twelve first-order factors formed six second-order factors which in turn constituted one, two, or three third-order factors. For our models in group 3 we examined on supplementary (additive) and complementary (super-additive) effects. For all models, we calculated absolute and incremental fit indices as well as validity and reliability measures. In order to scrutinize the interaction effects of the knowledge management capacities, we calculated and compared the different higher-order model specifications by calculating parcels and running regression analyses with STATA 12. We compared the direct effects of our six knowledge management capabilities on the dependent variable with the effects of supplementary and complementary interacted knowledge management capabilities. If the overall effect exceeds the sum of the individual effects, interaction effects of the knowledge management capacities are indicated (Tanriverdi and Venkatraman, 2005).



#### 4. RESULTS

From our confirmatory factor analysis with the AMOS 20 software package we derived 39 items in twelve factors that met the criteria for construct reliability and validity on the first-order level. We calculated Cronbach's alpha (threshold = 0.7), composite reliability (threshold = 0.7), and average variance extracted (AVE) (threshold = 0.5) achieving satisfactory reliability and convergent validity for all constructs (Hair et al., 2010). Finally, we assessed discriminant validity based on the Fornell-Larcker-Criterion (Fornell and Larcker, 1981). All constructs share more variance with their measures than with any other construct. From the analyses of the different groups of model specifications we found a third-order factor model as dominant design in terms of model fit. Absolute fit indices as well as incremental fit indices are well beyond the suggested thresholds (Hair et al., 2010). On the second level of our final measurement model the twelve sub-constructs, each with three to four items, formed the six factors that reflect our KM capabilities. The multiplicative interaction terms of internal and external capabilities at each process stage, like, inventive capacity multiplied with absorptive capacity, were insignificant. Although there was no complementary effect, additive interaction analyses confirmed our proposition of supplementarity of KM capabilities. The variables exploration and exploitation with the summed score of internal and external KM capabilities at the respective process stage provided significant results and showed better coefficients of determination ( $R^2$ , adjusted  $R^2$ ). Finally, the three way multiplicative interaction term of the factors exploration, retention, and exploitation provided significant results for both dependent variables, that is, NPD performance and objective firm performance.

#### 5. DISCUSSION

Our data supported the conceptual framework of Lichtenthaler and Lichtenthaler (2009). We verified the proposed structure of six distinct KM capabilities that each consists of two statistically distinct sub-constructs. As the interaction of internal and external knowledge management capabilities turned out to be of supplementary rather than complementary character, the frequent claim of open innovation as a panacea had been put into perspective. Seemingly, companies that take advantage of external resources can substitute their internal resources but cannot leverage their effectiveness in a super-additive manner. In contrast, as Chesbrough et al. (2006) argued, in an effective open innovation approach internal resources can be focus on core competences and add more value than if applied in other activities. Accordingly, one might even expect complementarity rather than supplementarity of KM capabilities. Future research might scrutinize on this aspect and investigate empirically under which conditions complementarity of internal and external resource can be achieved at each process stage. It might also be promising to include a more fully perspective and include costs, that is, to consider transaction costs for the coordination of external resources. This might be an approach to identify efficient inter-organizational cooperation practices. In addition, the effectiveness of KM capabilities might be influenced by the choice of partner types. A more sophisticated design of this aspect might lead to interesting findings, especially for practitioners. For them it is also highly relevant with which measures management can influence the effectiveness of an open innovation approach and for which organizations an open innovation approach is promising at all. Future research should thus investigate organizational antecedents of KM capabilities and organizational measures that are beneficial for an open innovation approach. Especially for the rather underdeveloped outbound aspect, the identification of a beneficial organizational design could provide guidance. How should firms implement technology transfer organizationally: with dedicated managers or even an own technology transfer unit? Our study takes a rather general perspective on the effectiveness of KM capabilities. Future studies should develop the scales and consider different environmental settings and contingencies as moderators. For firms in uncertain, dynamic environments high KM capabilities might be even more important than in more mature, less innovative markets. Our study focused on medium-sized German companies. Thus, our results might not hold for small companies or other national cultures with different appropriability regimes. If suitable data sources and proxies can be identified, it would be interesting to reproduce our findings with objective data. Also methodologically there are rich opportunities for further research. KM capabilities have to be fostered by firms over a longer period of time. Just as for the traditional definition of absorptive capacity, the concept of path dependency should be the target of future longitudinal research settings.

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## CHOICE OF A MANAGEMENT INSTITUTION: A DECISION MAKING APPROACH

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### ABSTRACT

*The mushrooming of management institutions in India of varied forms of ownership, increasing fees and a wide variety of quality ratings they receive from different agencies, makes it difficult for students to choose an institution for study. Also, institutions facing increasing competition need to understand which areas they must improve in order to become the preferred choice of students. This article aims to determine the factors or parameters that are considered important by students in their choice of a management institution and to develop a model that can help to decide if a particular management institution will be chosen if it receives some ratings in those parameters from its stakeholders. Quality dimensions relevant for management institutions were identified through empirical study and a questionnaire was developed which formed the basis for designing the model. Data collected, using this questionnaire, from students of ten management institutions in India, is taken to train a data mining model by apriori algorithm using WEKA 3.7.4. Intellectual property of institutions, including faculty quality and their contribution to research, publications and consulting, was found to be the most important factor in the choice of an institution.*

**Keywords:** Quality, Management Institutions, Data Mining, A priori Algorithm

### 1 INTRODUCTION AND BACKGROUND

Quality of management institutions has become a major concern in India especially with the mushrooming of institutions and the rising cost of education. Understanding the quality dimensions for management institutions is important for institutions to focus their improvement efforts and also for students to decide upon an institution to study. Students often look at the ratings and rankings provided by different agencies at national and international levels. However, there are debates about wide disparities in criteria used by different agencies and their correctness, validity of methods used, and reliability of measurement scales.

Review of related literature shows that there are several studies on quality of educational institutions and how to apply the generic quality management principles in context of institutions. Various researchers have also used SERVQUAL, the generic quality measuring instrument (Parasuraman, Zeithaml and Berry, 1985) in management institutions [Rigotti and Pitt (1992), Cuthbert (1996a, b), Bandyopadhyaya et al (2011)]. So, the generic SERVQUAL dimensions need to be modified for measuring service quality of management institutions to make them more meaningful to the stakeholders. Bandyopadhyaya et al (2010) identified twenty-four parameters customized for management institutions and used them to develop a questionnaire. The questionnaire used the three-column SERVQUAL scale format (developed by Parasuraman, Zeithaml and Berry, 1994) to measure the minimum expectations, desired expectations and perceptions about a particular institution.

One gap that SERVQUAL scale can measure is the gap between the desired levels and minimum acceptable levels of expectations from an institution. Obviously, an institution is chosen if its perception rating is at least above the minimum acceptable rating. It is reasonable to assume that expectation ratings of desired level and minimum acceptable level for different parameters vary. For example, the maximum desired rating and minimum acceptable rating for course curriculum may be 5 and 4 respectively while for networking these ratings may be 4 and 2 respectively. The desired and minimum acceptable ratings obtained from a sample of students from different institutions will also



most probably have variation. So, it is important to have a standard benchmark of ratings i.e. the general sample trend of what the students perceive as desired level and acceptable level for different parameters. In other words, it is worthwhile to find the maximum desirable ratings and minimum acceptable ratings of different parameters as perceived by the Indian students. This will help to conclude with better confidence whether a particular institute is performing at desired level, or above or below minimum acceptable level, as perceived by students, with the help of the performance ratings obtained from students of the institute. The institutions also need to understand which quality criteria are important for them so that they can focus their improvement efforts in the required directions. The parameter which gets the highest rating for desired level from maximum number of students in the sample study can be said to be the most important criteria for deciding performance.

To study the perceptions of stakeholders the data in form of feedback needs to be collected and the general trend in data studied to get some meaningful information using data mining techniques. Data mining process involves summarizing, finding relationships and extracting beneficial information from the data, in a more understandable and usable form and thus can help in decision making (Ogut et al, 2008). Data mining has been used for decision making in a number of fields, including science, engineering and business. In the context of institutions, various authors have suggested use of data mining for better understanding of administrative procedures (Garcia and Zanfrillo, 2007), diagnosing student learning problems (Hwang, 2005), student enrolment management (Vialardi et al, 2011), managing classes and courses (Garcia et al, 2011; Singleton, 2009), student counselling (Ranjan and Malik, 2007), student dropout analysis (Jadric et al, 2010) and student satisfaction (Dejaeger et al, 2012).

In this article, data from students of 10 management institutions in India is taken to train a data mining model by *a priori* algorithm (Han and Kamber, 2006). Quality dimensions relevant for management institutions are identified through empirical study and a questionnaire is developed which forms the basis for designing the model. The main objectives of this article are:

1. To develop a model for that can help decide if a particular management institution will be chosen if it receives some ratings from its stakeholders
2. To determine which factors or parameters become important in the choice

## 2 METHODOLOGY

As mentioned earlier, twenty-four quality parameters relevant for management institutions (shown in Table 1) were identified (Bandyopadhyaya et al, 2010). The questionnaire developed with these parameters was designed to get the data about the minimum acceptable service level and desired service level, both on a 5 point Likert scale. These parameters could be grouped under five major quality dimensions viz. Intellectual Property (five items numbered 1, 6, 11, 16 and 21 in Table1), Course Curriculum (four items numbered 5, 10, 15 and 20 in Table1) and Selection Procedure (three items numbered 2, 7 and 12 in Table1), Support Mechanism (seven items numbered 3, 8, 13, 17, 18, 22 and 23 in Table1) and Networking (five items numbered 4, 9, 14, 19 and 24 in Table1). It may be noted that the first three dimensions viz. Intellectual Property, Course Curriculum and Selection Procedure are academic indices while the last two viz. Support Mechanisms and Networking are non-academic indices.

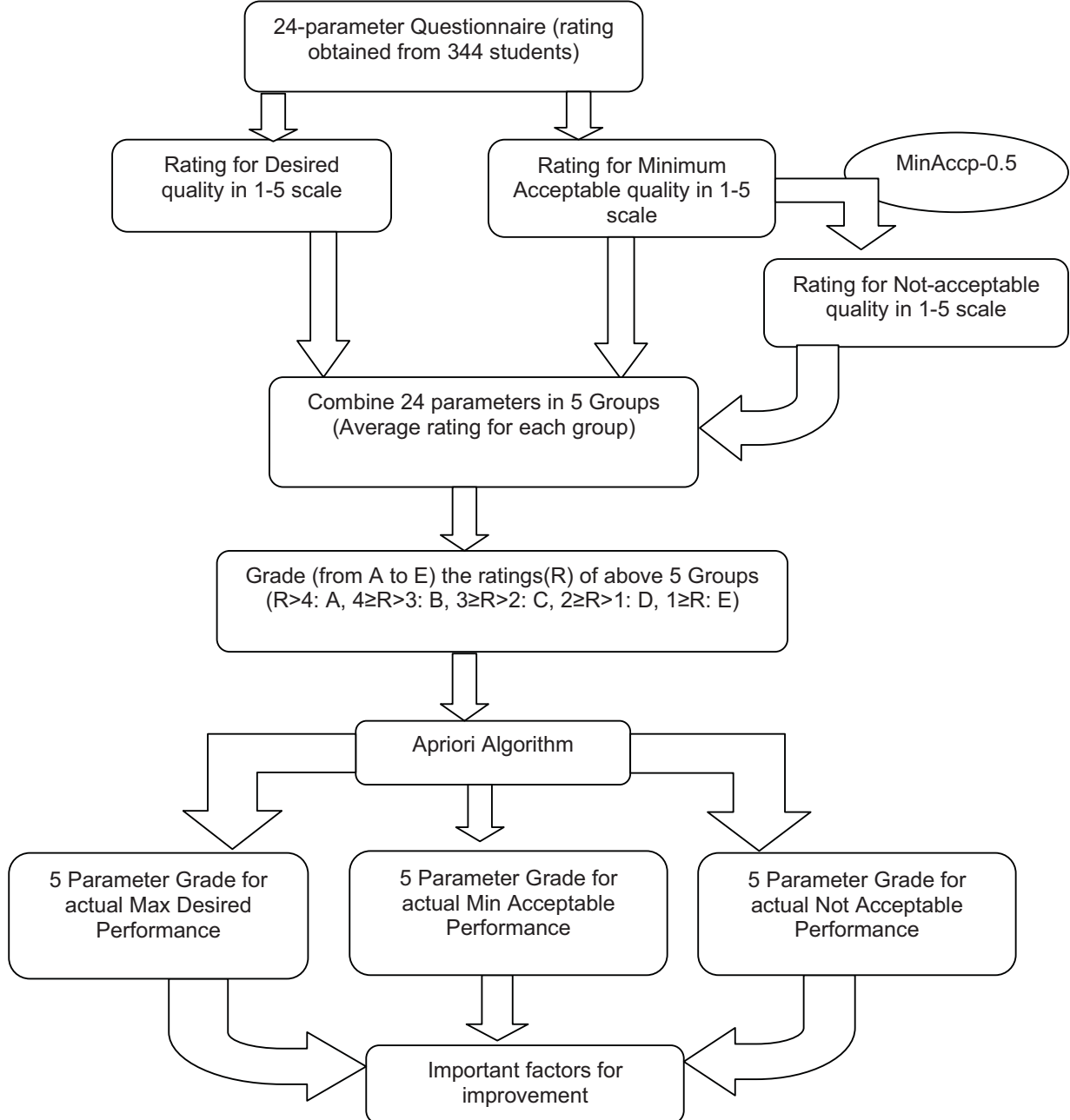
**TABLE 1: QUALITY PARAMETERS IN QUESTIONNAIRE**

1. Full time assignment of faculty members
2. Prior industry experience of students
3. Latest reference books, journals (including on-line journals), business magazines and research papers in the library
4. Networking with industry and promoting institution's achievements
5. Offering & designing courses designed as per current industry requirements with project work as an important element of all courses
6. Industry or corporate experience of faculty
7. Standardized written examination, group discussion and personal interview for student admission
8. Latest information & communication technologies and 24 hour Internet facilities
9. Alumni endowments for research and institute development
10. Regular industry visits & need-based on- job training for students
11. Academic qualification of faculty
12. Psychometric tests for student admission
13. Visionary leadership, well-defined mission and a distinct logo of institution
14. Collaborating with other Indian or foreign institutions and promoting student and faculty exchange programs
15. Case studies in all courses
16. Consultancy, research and publications by faculty
17. Attractive buildings; luxurious guesthouse and well-equipped classrooms
18. Placement of all graduating students by the institution
19. Arranging regular talks by eminent industrialists &/or CEOs; conducting business quizzes, seminars and conventions
20. Standardized courses benchmarked against those of the best institutions in the world
21. Publishing journals and books by institute
22. Adequate and competent support staff
23. Quality of placement provided
24. Social work and tie-up of institution with NGOs & involving students in social work

The feedback of desired level of performance and minimum acceptable level of performance is taken on all 24 parameters in 1 to 5 scale where 5 indicates best performance and 1 indicates worst. It is seen from the data that the average tolerance gap between desired and minimum acceptable levels is around 1 with a standard deviation of 0.5. Thus the ratings for below minimum acceptable limit are calculated by subtracting 0.5 from minimum acceptable ratings.

The feedback of the students taken on 24 parameters is grouped into five broad quality dimensions, as mentioned earlier. The average feedback of all the parameters in a quality dimension is taken as the feedback on that quality dimension. The average feedback in 1-5 scale is then graded from A to E where highest grade of above 4 is given A and lowest grade of 1 or below is given E. The grading pattern from the student feedback is then studied from this feedback data using a priori algorithm. The detailed methodology used in this paper for finding the decision of any rating is shown diagrammatically in Figure – 1 below.

FIGURE – 1: OUTLINE OF METHODOLOGY



### 3 DATA

Data was collected from ten selected institutions which offer postgraduate courses in management in two eastern states in India viz. Orissa and West Bengal. The questionnaire (shown in Table – 1) was administered to 344 students of these institutions. The three-column questionnaire gives data about the minimum service level (minimum quality required for acceptability), desired service level (highest quality desired) and perception about the institution from the point of view of students of that institution on each of the twenty four quality parameters. The data for minimum and desired quality

are used for the analysis, both of which are taken in a 5-point Likert scale from Low to High. So, the total data contains feedbacks of desired good and minimum acceptable grades. The non-acceptable grade range is calculated from the minimum acceptable grade range. This gives 1032 data points having 344 grades for desired, minimum acceptable and not acceptable ranges from same group of students. The perception level ratings was not used for the current study as the scope of the study was only to understand on a whole what grades on different parameters make an institution desirable, at least acceptable and not acceptable.

#### 4 RESULTS AND DISCUSSIONS

The data is studied with the objective of identification of factors which contribute in making an educational organization a desired destination for the students. When we collect feedback of students on performance of an organization in a subjective scale it is difficult to tell with certainty what actually a rating of A or B implies. This perception of quality varies from person to person and the grouping is merely fuzzy. Moreover to judge an institution we need each time to take the range of good and desired feedback from students and then conclude on the performance. With an objective of standardizing the feedback scale so that we can conclude with more confidence on performance of an institution on global scale with small group of student feedback on their institution performance. For this purpose, the strong associations of grades for the rating of desired, minimum acceptable and not acceptable are studied using Apriori algorithm using WEKA 3.7.4. The rules with a minimum support of 5%, minimum confidence of 0.55 and minimum correlation measure (Lift) as 1.5 are considered. The results are tabulated in Table 2 below.

**TABLE 2: TABLE SHOWING THE RULES FROM DATA**

Antecedents	Consequent			
	Rating	Support%	Confidence	Lift
IP = A NET = A SP = B CC = A CC = A SM = A SP = B CC = A SM = A SP = B	Desired	56.10	0.89	2.67
		16.86	0.88	2.64
		15.41	0.91	2.74
		15.41	0.91	2.74
		53.49	0.89	2.68
		15.99	0.90	2.71
		57.85	0.85	2.56
		60.17	0.90	2.69
		19.77	0.89	2.68
SP = C SM = B IP = B SM = B NET = C	MinAccep	24.42	0.62	1.87
		18.02	0.51	1.52
		19.48	0.59	1.76
IP = B SM = B SP = C IP = C SM = C SP = C NET = C NET = C	NotAccep	15.70	0.65	1.95
		36.05	0.65	1.94
		30.23	0.60	1.79
		24.42	0.60	1.79
		34.01	0.57	1.71

**The abbreviations used in above Table are** IP: Intellectual Property; NET: Networking; CC: Course Curriculum; SM: Support Mechanism; SP: Selection Procedure; Desired: Desired Rating for Best; MinAccep: Minimum Acceptable rating; NotAccep: Not Acceptable rating

The rules of Table 2 for desired level of rating can be read as:

- Rule 1:** IP = A & NET = A → Rating = Desired, Support 56.1%, Confidence 0.89, Lift2.67  
**Rule 2:** IP = A & NET = A & SP = B → Rating = Desired Support 16.86%, Confidence 0.88, Lift2.64  
**Rule 3:** IP = A & NET = A & SP = B & CC = A → Rating = Desired Support 15.41%, Confidence 0.91, Lift2.74  
**Rule 4:** IP = A & NET = A & CC = A → Rating = Desired Support 15.41%, Confidence 0.91, Lift2.74  
**Rule 5:** IP = A & NET = A & SM = A → Rating = Desired Support 53.49%, Confidence 0.89, Lift2.68  
**Rule 6:** IP = A & NET = A & SM = A & SP = B → Rating = Desired Support 15.99%, Confidence 0.90, Lift2.71  
**Rule 7:** IP = A & CC = A → Rating = Desired Support 57.85%, Confidence 0.85, Lift2.56  
**Rule 8:** IP = A & SM = A → Rating = Desired Support 60.17%, Confidence 0.90, Lift2.69  
**Rule 9:** IP = A & SM = A & SP = B → Rating = Desired Support 19.77%, Confidence 0.89, Lift2.68

The major observations from the rules are:

1. The Intellectual Property dimension is given highest priority by majority of the students as the desired level is A and minimum acceptable is B.
2. The Course Curriculum has a desired level of A along with Intellectual Property. However, student perception on minimum acceptable and not acceptable quality levels for Course Curriculum varies. This is evident from the fact that there is no major rule for minimum acceptable and not acceptable quality levels for Course Curriculum (refer Table 2). It may thus be inferred that Course Curriculum is not as important as the Intellectual Property parameter.
3. The Selection Procedure is given the least priority as its desirable level is B as compared to others which have a desired level of A. Thus selection procedure is comparatively the least important parameter for rating an institution and given least importance by students in selecting an institute.
4. The Support Mechanism and Networking has a minimum acceptable level of B and C respectively. So, these parameters are not given as much importance as Intellectual Property or Course Curriculum.
5. The lifts for all the rules are more than 1 which shows that there is a positive correlation between each two quality dimensions taken together.

## 5 CONCLUDING REMARKS

The following conclusions can be drawn from the rules mined from the feedback data:

1. It can be observed that the most important parameter is the Intellectual Property. This broad dimension includes five parameters viz. Full time assignment of faculty members, Industry or corporate experience of faculty, Academic qualification of faculty, Consultancy, research and publications by faculty and Publishing journals and books by institute. It is interesting to note that this dimension is given greater priority even by the students, who, one generally assumes, will be more interested in the more visible dimensions of networking or support mechanisms that are directly linked to their study environment and job offers which they get after graduation.
2. The Course Curriculum also plays an important role in rating of an institution. It includes four parameters viz. offering & designing courses designed as per current industry requirements with project work as an important element of all courses; Regular industry visits & need-based on- job training for students; Case studies in all courses and Standardized courses benchmarked against those of the best institutions in the world.



Therefore, institutions need to focus on these areas in order to improve their quality, as viewed by the students.

The data mining approach identifies inherent pattern from the available historical database. This study is conducted with 1032 grading records which may not be exhaustive to suggest a very clear pattern. Though some useful patterns could be identified, this limited data size may tend to bias the association rules.

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## SOCIAL MEDIA IN A GLOBAL TRAINING ENVIRONMENT

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### ABSTRACT

*To create a consistent training environment across the globe can be a challenging task. One of the biggest challenges is incorporating new technology into your training curriculum to meet the needs of those attending training and the needs of your organization. It is increasingly difficult when you are working with a global organization and you must reach different areas of the world while meeting your training deadline and achieving the goal of your program. Social Media outlets seem to be the answer to the growing concern of meeting the training benchmarks in a global environment. Social Media outlets can include popular social networking sites, sites that allow for videos and blogs to be posted, and sites that allow for instant communication with other companies and individuals.*

**Keywords:** Social Media, Training Environment. Global Organization

### 1. INTRODUCTION

Global training is an ongoing research project. In this work we intend to present our findings mostly on the uses of social media in attaining goals in a global training environment. The work is based on years of experience in developing and delivering training programs for a large global institution. The Global institution is based in the United States and is specifically in the Healthcare IT industry. The offices are centrally located in Chicago and there are remote employees and contractors located in many states. Additionally, the organization is located in four continents. The organization specifically offers solutions to Healthcare IT. Being a large organization with a goal of providing consistent training, is a challenge in itself. Now add employees being located all over the globe. How do you incorporate social media into your training curriculum in a meaningful way.

The list of Social Media outlets is expansive and grows each day. Choosing which methods of Social Media to utilize in your training curriculum is not an easy task. You must consider the type of audience you are attempting to reach, the technology a company offers to those attending a training class, and then you must look at whether the Social Media outlet you have chosen will be compatible with your company's operating system and whether or not the firewall your company employs will allow for the use of the Social Media outlet. Who is attending your training class? Will you have to first provide basic training on how to use the Social Media outlet you have selected? Many factors must be taken into consideration when you are analyzing the group that will be attending your training course. You must look at how often a person utilizes a computer for work or personal use. You may want to look back at training records to review whether or not a person who will be attending has attended other training courses you have offered and what their success level with the technology utilized was. Will you need to offer different courses based on skill levels? Technology can have an adverse effect on your training course. If you provide a new technological tool to a training class, will the attendees be distracted by the device you are providing? Is your training course the only access point on the tool for those attending your training course or will they be able to access the internet and personal social networking devices? Will an attendee of your course disregard your company's technology policy and attempt to access sites that are not allowed?

#### 1.1 Incorporating Social Media Across The Globe: Issues And Concern

Incorporating Social Media outlets into your training curriculum in a meaningful way is by itself a difficult task. The difficulties multiply when you have a large network of sites and contractors that employ a large amount of employees. The first problem is in selecting the right Social Media outlet for your organization. The concerns that follow include: The skill level of the employee utilizing the technology, cost, network compatibility, and whether the Social Media outlet chosen will become a distraction are all issues to consider when starting the selection process.

Choice of Social Media Outlet is as important as the utilization of the new technology. Social Media outlets change daily. You have the opportunity to set up a static web page devoted to your organization or training

course while content on the change can be instantaneously changed. Other outlets offer you instantaneous messaging. Social Media Outlets can be partnered. You can create a static page and add an instant messaging feed feature to the page. The choice is determined by the reliability of the option, security of the Social Media outlet, popularity amongst users, and the ability to incorporate the choice of Media outlet into your training program in a meaningful way.

Network Compatibility can not only vary from country to country, it can vary from organization to organization. If you take for example an organization that specializes in Healthcare information or Finance, the organization will most likely have firewalls that prevent many Social Media outlets from being utilized. For some Social Media outlets, holes in the firewall can be created by an IT staff. However, this generally takes permission to do so and can make an organization's system vulnerable to a hacker or a virus. This makes many organizations reluctant to make any changes to their firewall protection. Additionally, you run into issues when looking at Global compatibility. What type of network is available in the countries you are working with? Are the same tools to access the chosen Social Media outlet available in all countries you work with? What obstacles will a person who travels for the organization and has the need to access the training in multiple countries encounter?

Employee Skill level can be a difficult issue to overcome. In any Global organization you have employees at all skill levels. You have some employees who do not utilize a computer every day and some that utilize not only computers but many forms of technology on a daily basis. You may need to look at your curriculum based on the skill level of the employees attending training and have offerings of your curriculum at different levels of competency.

Distractions to Training are to be avoided as much as possible. Choosing the wrong type of Social Media outlet can deter from reaching the goals of your training course. For example, instant messaging can distract any employee that already feels they are delaying completing tasks to attend training. Some attendees will be fascinated with new technology and be tempted to test functions of the technology being offered that are not part of the training curriculum.

Cost of Technology is always a factor when deciding what to incorporate into your training course. Will new software be needed to implement the desired use of technology? Will devices and hardware need to be purchased to utilize the Social Media outlet? How many and how much per unit? Another concern will be how often technology will be upgraded. If technology is upgraded, will you lose the ability to access previously created curriculum and results? How much will the upgrade cost? How many employees will need to be involved in implementing and upgrading technology?

## **1.2 Necessities in Selecting Social Media outlets for your Organization**

It is important for every global operation to have the appropriate tools at their disposal to provide the most efficient training that meets the needs of both attendees and an organization. The process to select a Social Media outlet and implement the outlet can be lengthy and difficult with many obstacles to consider and overcome. The process is schematized in figure 1.

It is important that all employees are provided with tools to achieve success in a training course. Below you will find a list of items to consider in order to execute a good global training plan with Social Media incorporated:

A Review of Attendee Skill Level: In a Global Organization it will be necessary to provide multiple times and dates of courses depending upon how many employee's need to complete the course as well as their location in the world. A new set of courses will need to be considered once the skill level of the attendees is analyzed. You may have participants that do not utilize technology on a regular basis. If this is the case, it is recommended that a course to instruct employees how to utilize the Social Media outlet you have chosen prior to the course curriculum being administered is offered. This will assist in the attendee having a productive and efficient training course provided to them. If an attendee is struggling with the Social Media outlet and its use during your course it is likely you will not reach the goal of the training course. A further detail to consider is assumptions. It has been assumed in the past that an employee holding a managerial position or an executive level position is well versed in technology. This is not always the case. It is strongly encouraged that all attendees are reviewed utilizing the same criteria regardless of level within the organization.

A Learning Management System (LMS System): Organizing your training efforts and the use of Social Media within your organization is essential. An LMS system can provide a training department with information about how often and how effectively training tools were utilized. Information can be recorded and stored regarding whether an attendee has achieved training goals set forth by an organization. The information provided can be compared to courses that do not incorporate Social Media. This will help a trainer to analyze the return on investment a Social Media outlet is bringing to training curriculum. Once all the data is analyzed you may choose to change the form of Social Media you are utilizing, or incorporate more Social Media into the curriculum. An LMS system can also be utilized to review your attendees' skill level. If an attendee is struggling

to complete a program in the same amount of time another trainee is completing their program this will give you the opportunity to review where the struggle is occurring. Is it possible the attendee needs further assistance with the Social Media you have selected for the course?

Listing and Information of available Social Media outlets: What type of Social Media is available to you and your department? Looking at all potential avenues to incorporate Social Media into your training course can be an extensive process. Asking fellow employees, research on the internet, and personal use will all be paths you can take in looking at Social Media. It is important when researching the available outlets to also look at benefits, risks, and potential for return on investment. You may want to enlist the help of your technology contact or team as well as your marketing/public relations team to assist you in this process. This can also be a taxing undertaking because Social Media outlets change daily. Whether it be privacy settings or new outlets available to the general public, your options are continuously changing and will need to be reviewed frequently during the process and as long as it is incorporated into your training curriculum.

Information on Internal System Limitations: Firewalls have their benefits and limitations. Larger organizations have difficulty utilizing some forms of Social Media due to strict corporate guidelines on firewalls. Some exceptions can be made. Temporary and Permanent holes can be placed in a firewall to allow access to a Social Media site. This is not always allowed or recommended. In the healthcare and finance industry, most likely your organization will not allow this due the nature of the information you are handling. It is recommended that you work with your technology/IT point of contact or department to learn about the limitations of your system with regards to Social Media and utilize the most compatible form available. If you work with an outlet that is compatible and doesn't require altering of a firewall, you are less likely to have issues with the outlet working consistently through every training course provided and you are less likely to have user log on issues.

Tools to Utilize the Social Media Outlet: If an attendee does not utilize a computer as part of their work responsibilities you may need to consider cost in providing computers to your training class. It may not be a computer you wish to use, it could be digital tablet. Whichever Social Media outlet you choose it will be important to look at whether you have the capacity to provide the ability to log in to the Social Media outlet to all trainees successfully and in a timely manner. This can mean extra cost to your organization and can prevent you from using a Social Media outlet all together. It is recommended that you review the tools and equipment available to you currently as well as the compatibility with your outlet of choice. Once a decision is made it is time to shop. Look for the best deals available through company approved vendors. You may have a purchasing department that can assist you with this.

Point of Contact for issues and upgrades of your Social Media Outlet: It can be frustrating if equipment or systems do not work. It can be further frustrating if you attempt to report the problem and are not provided with a clear path or process to do so. It is important that when your Social Media outlet is selected, you are also selecting a point of contact or escalation process to resolve issues and work with your team on upgrades. This will not unfortunately eliminate obstacles, but it will certainly provide a clear path to a resolution and will be a more efficient process to work towards solving your issues. The Point of Contact should be a decision maker that has a strong knowledge in the Social Media outlet you are working with. If there is not a person with those credentials in your organization, what training courses are provided in a local community college, online, or perhaps from the Social Media outlet's organization that will help create this role within your organization?

Trainers: Although a point of contact is desired for this process, it is also important that any trainers that will be administering the training curriculum will be knowledgeable of how to use the Social Media outlet incorporated into the training. Because, let's face it, every system will have a breakdown at some point, it is also important that a trainer is knowledgeable on simple trouble shooting processes. A train the trainer program is recommended to any organization changing the way curriculum or training is delivered.

Compatible Globally Recognized Software: As with any Global Organization, you will run in to one major obstacle: Global compatibility. Software, especially newer versions of software are not always available in every part of the globe. You have two issues that arise from this situation, one would be employees that reside in other parts of the world and two would be for employees that travel frequently. Most of the time software is compatible with multiple systems not just one. Another item to consider is that Social Media is used differently in all parts of the world. Many internet based organizations make adjustments to their product based on the types of users located in different parts of the globe as a result you may not be able to select the outlet you want. You may need to consider a more globally recognized software program or social media outlet to meet your global training needs. You may be tempted to provide different versions of the training. This is not recommended. It is important to remain consistent in your training programs and provide all employees with the same tools. Changing your curriculum may also mean you need to change your benchmarks which would mean you are providing different goals to employees taking the same course.

Compatible Globally Recognized Wireless/Internet capabilities: As with software, wireless and internet capabilities can be different within different locations in an organization. Some countries will not have the same wireless capabilities as other countries. Have you ever tried to download a document using both a DSL line and high speed internet? The time it takes to download a document using a DSL line is infinitely longer. Some programs will work on high speed but not on DSL. Some wireless systems are not as strong as others and will have multiple issues while a course is being run in training. This is another field that you will need to work with your IT point of contact or team on in order to ensure you are taking into account the limitations of the wireless and internet options available to the people in the countries you are working with. Again, you may be tempted to provide different curriculum to different parts of the world. In some cases this is reasonable. However, it is not always recommended to vary the training or training methods because this can cause inconsistencies in the training and provide variables in the benchmarks and an attendee's ability to achieve training goals.

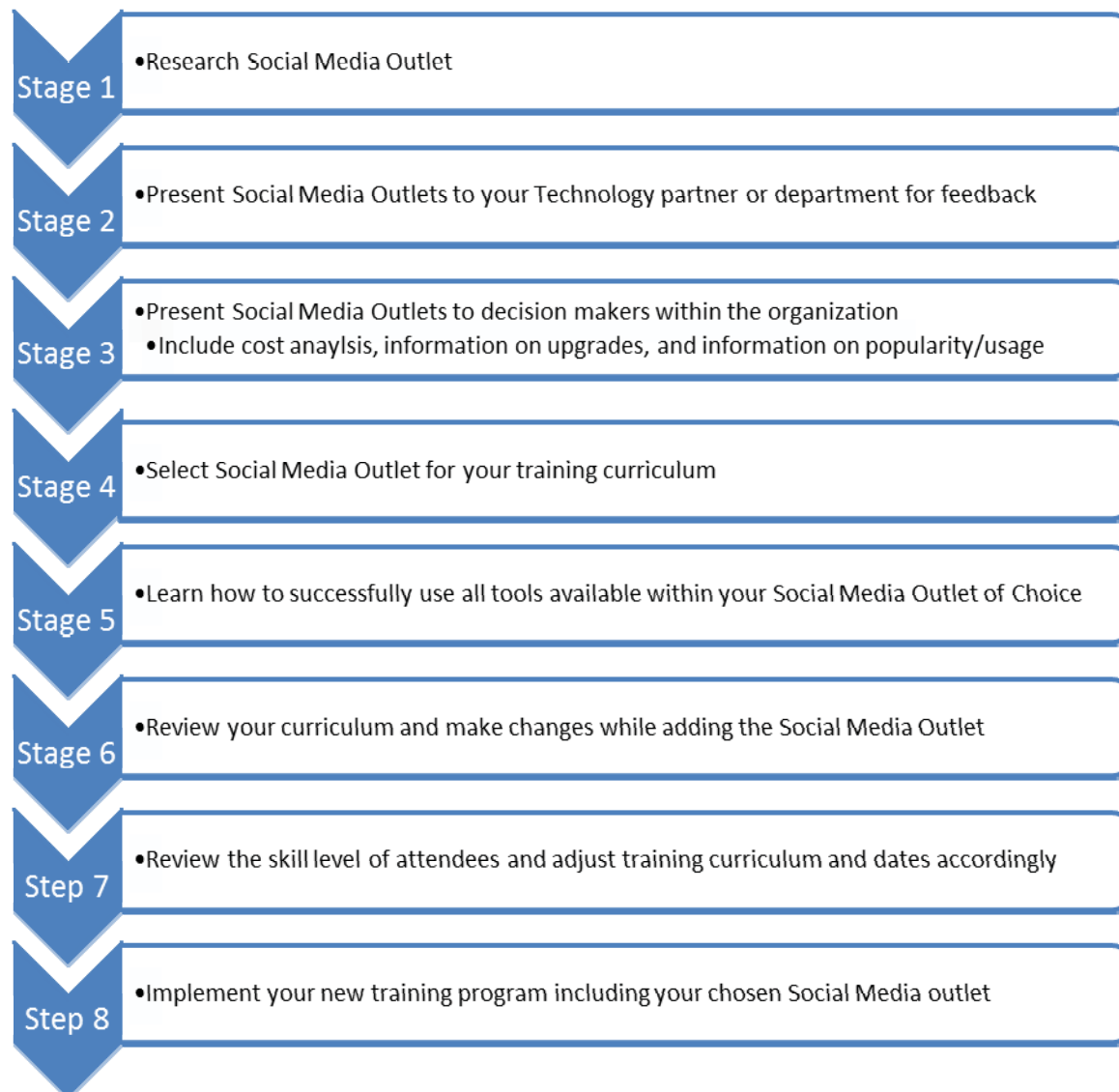


Figure 1. The Process of incorporating a Social Media Outlet

## 2. TRAINING METHODOLOGY AND OUTCOME

In this section we will present the overall process with a detailed example of how using the correct Social Media outlet can enhance an overall training experience for attendees and assist in reaching the training goals of your organization.



Let us take an example of a class containing entry level associates who vary in the skill level of using technology. Upon review of skill sets it was determined that, out of the twenty-three employees required to take the training course being provided four of the employees did not utilize a computer for their daily tasks. It was established that the four employees have used computers just not extensively. They are aware of the basics.

The curriculum being provided was a course on customer service; more specifically how to effectively respond to customer issues in written format. The attendees held positions within the organization that were customer facing. The selected Social Media outlet was a site that provided a static page that contained information about the organization including logos. The page provided access to customers and the general public to send comments and questions to the organization. This Social Media outlet was going to be utilized in training because it was already being utilized within the organization. It was established and worked in a consistent manner. It was also being utilized because the focus of the training was written responses to customers and this outlet was being utilized for that.

Trainers who had experience using the Social Media outlet both personally and professionally were selected. A train the trainer course was provided. Trouble shooting tips were documented and provided to the trainers to assist with the course curriculum. Additionally, all attendees were provided with access to the site to be able to perform the necessary tasks.

This Social Media Outlet was already in use so the need to review compatibility of software, compatibility of wireless/internet, limitations of the network were already addressed. This outlet had been selected by the company previously because it met those needs.

The course was being offered to employees in North America, Asia, and Australia. The course was an online course, however, it was important to have trainers available to answer questions or resolve issues with the curriculum. Additionally, the four employees that did not utilize computers regularly needed a pre-course on the basics of this Social Media outlet. Multiple dates and times for the pre-course were established as well as multiple times for the customer service course. Although it seemed that only four people needed the pre-course, it was offered to all twenty-three attendees but not mandatory.

Prior to the dates of the courses, the training department reviewed the available equipment. It was established that the four employees that did not have access to a computer as part of their everyday tasks, needed to be provided with access. The technology department within the organization had a laptop rental program that allowed an employee to sign out a laptop and use it for the course. Other options if laptops were not available would have been to either provide access for one to go to a local library or take the course at home. Another option would have been for the attendee to utilize another employee's computer during off hours or while the other employee was at lunch. Three of the four employees were located in North America while the fourth was located in Australia. The laptop program was available in both North America and Australia.

The course was listed in the Learning Management System in order to be able to document the attendee's achievement of benchmarks and goals while monitoring the use of the Social Media outlet and providing the training department with the ability to analyze the return on investment.

The training courses were successfully delivered to all twenty-three attendees within a ninety day timeframe. Attendee's skill level varied a bit when leaving the course but the gap in knowledge of the available outlet from one attendee to another was narrowed. All employees were expected to learn how to properly use the Social Media outlet and create written responses to customers. The expectation was that this skill would be utilized daily upon the courses completion.

### **3. DISCUSSIONS AND CONCLUSIONS**

In any organization operating globally it is important to meet the needs of the organization as well as the trainees. Performing pre-course analytics to address any concerns on an attendee's ability to successfully complete training course objectives is essential to the success of training in any organization. Providing a basic level course to employees allowed not only for the gap in knowledge to narrow when the course curriculum began, it also prevented issues in morale. It can be difficult emotionally to feel as though you are behind the other attendees of your training course.

The ability to trouble shoot and resolve issues is essential for trainers. Although a trainer should not be expected to resolve major system issues, it is helpful to keep the course on track with completion times and dates in mind if a trainer is knowledgeable of the system. It would be wonderful if the systems we utilize always worked, however, we know and can be prepared for minor issues. This will help your training courses run smoothly and ultimately will help you to achieve your training goals more efficiently.

Learning Management systems are valuable. The information provided can not only help you analyze an attendee's performance, but it can help you to understand whether course curriculum is effective or not. If you have a course that is offered to all employees and has a success rate of twenty-five percent, the curriculum is where I would begin my re-evaluation of the course. Additionally, the information provided from the Learning

Management System's reports can help when you need to provide reasons to incorporate newer software, new Social Media outlets, and new technology. The Learning Management System can not only take the temperature of the user but it can be back-up to the recommendations you make to your team regarding future training curriculum.

Overall, we found that research was essential to selecting the best Social Media outlet and not all Social Media outlets are effective. Selecting the right outlet can be difficult but you can be in place to see multiple benefits to the training department, attendees, and organization.

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## AN EXPLORATORY RESEARCH OF STUDENTS' ATTITUDE TOWARD HYBRID INSTRUCTION MODEL IN THAILAND

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### ABSTRACT

*Many universities in the Central region heavily devastated in 2011 due to the Thai worst flood in more than 50 years. Apart from damaged infrastructure and educational equipment, students had been unavoidably affected as floods had forced their schools to postpone the start of their semesters. In order to cope with late timelines of students' educational plans and extremely limited usable infrastructure and educational equipment, a university in Thailand has implemented Hybrid Instruction Model: HIM. A review of past and present literature related to HIM, Technology Acceptance Model, e-Learning models, and Expectancy Disconfirmation Theory (EDT) was performed in order to explore factors that may affect students' attitude toward HIM education. The research methodology was conducted using semi-structured interviews to deeper understand the problem domain. Such understanding is expected to result in enhanced course planning and students' learning outcomes. These preliminary results are also likely to assist developing a research model for future quantitative approaches.*

**Keywords:** Hybrid Instruction Model, Thailand, Hybrid Course, e-Learning, TAM, Satisfaction, EDT

### 1. INTRODUCTION

Over 2 million out of around 66 million (July 2011) Thai people had affected by Thailand's worst flooding in more than 50 years at the end of 2011 (CIA, 2012; MCOT, 2010). Twenty six provinces covered with floodwaters, and more than 430 people, including over 70 children, died due to the floods (Brown, 2011). The megaflood swept across 60 of Thailand's 77 provinces from October to December 2011, swamping factories such as Honda Motor Company and Canon Incorporation and damaging more than 10 percent of the nation's rice farms (Yuvejwattana & Suwannakij, 2010). Don Mueang Airport, the second national airport of Thailand, lost around 200-300 million baht (US\$6.6-10 million) in revenue during the flood crisis last year which forced the airport to halt its services (MCOT, 2012). The finance ministry of Thailand cut its forecast for economic growth to 3.7 percent from 4 percent and said the disaster may cost 120 billion baht (\$3.9 billion) (Yuvejwattana & Suwannakij, 2010). The flooding heavily hit universities in the Central region, "especially those in Pathum Thani, with losses estimated in the hundreds of millions of baht" (KHAOPA, 2011). Asian Institute of Technology (AIT), Thammasat University (TU), Kasetsart University (KU) and Rajamangala University of Technology Thanyaburi (RMUTT) experienced problems with their science and engineering laboratories, where immovable machines worth millions of baht had been submerged. KU's agricultural machinery had been inundated, while AIT's library had kept books on the first floor and they had been under water for more than a month. Rangsit University (RU)'s studios for use by mass communications students and expensive dental equipment for dental students had also been damaged. Last but not least, Bangkok University (BU) had "a big problem with its electrical systems in many buildings, as most of the boxes used to control the systems" were on the first floor (KHAOPA, 2011). Thammasat University's Rangsit campus had suffered almost 3 billion baht in damage, while Bangkok University's Rangsit campus estimates the flood impact at more than 1 billion (Bangkokpost, 2011). Apart from damaged infrastructure and educational equipment, students had been unavoidably affected as floods had forced their schools to postpone the start of the second semester for 3 months (KHAOPA, 2011). They started their studies in January 2012 instead of the middle of October 2011. In order to cope with late timelines of students' educational plans and extremely limited usable infrastructure and educational equipment, a university in Thailand has implemented Hybrid Instruction Model: HIM. Then, the purpose of this study is to explore students' attitude toward HIM of this university in order to discover factors affecting effectiveness and satisfaction of the HIM.

## 2. LITERATURE REVIEW

Not only threats of natural disasters, but also the rapid growth of broadband networks and portable devices and portable computers in today world support the use of computer-mediated learning, which is likely to superior to traditional instructional modes (Alavi, 1994; Ayyagari, 2011). Cavus claimed that using learning management system (LMS) on mobile devices is the learning platform for the future learning environment (Cavus, 2011). E-learning tools and technologies have been implemented to support conventional courses in higher education institutions introducing "hybrid" e-learning module that aims to enhance the learning experiences of students (Ahmed, 2010). A new idea of combining the good parts of online courses with that of face-to-face courses gives a new structure with different names including hybrid instruction, mediating learning, blended learning, Web-enhance instruction, and Web-assisted instruction (Delialioglu & Yildirim, 2008). Fundamentally, hybrid course consist of face-to-face components such as in-class discussion, group work, lecture together with web components like online contents, assignments, announcement, chat room and other online materials (Delialioglu & Yildirim, 2008). Many of researchers pointed out that students in hybrid courses showed positive perceptions of the learning method (Delialioglu & Yildirim, 2008; Marques, Woodbury, Hsu, & Charitos, 1998). Studies on student achievement in hybrid courses indicated that students were more successful in this type of course than in purely web-based or traditional courses (Christmann & Badgett, 1999; Delialioglu & Yildirim, 2008; Vernadakis, Antoniou, Giannousi, Zetou, & Kioumourtzoglou, 2011). Nevertheless, there has been a small number of e-learning for higher educational institutions in Thailand due to limited infrastructure, human resources, hardware, software, and network. Additionally, the rules, regulations, guidelines for the accreditation of the e-learning of universities in Thailand at present are still unclear. A state organization or an agency like the Office of the Higher Education Commission or a private agency should mentor the accreditation (Pumipuntu, 2006). Technology Acceptance Model (TAM) illustrates individuals' attitudes and acceptance of information systems (Davis, 1989). Davis (1989) adapted TAM to predict user's acceptance of information technology and introduced two important constructs, *perceived usefulness* and *perceived ease of use*. Sun et al. (2008) and Daneshgar et al. (2010) developed and tested an integrated e-learning model between TAM and Expectancy Disconfirmation Theory (EDT) (Oliver, 1980) with six dimensions: learners, instructors, courses, technology, design, and environment (Daneshgar, Toorn, & Ramburuth, 2010; Oliver, 1980; Sun, Tsai, Finger, Chen, & Yeh, 2008). In the learner dimension, *learner attitude toward computers*, *learner computer anxiety*, and *learner Internet self-efficacy* were three identified factors. The factor of *instructor response timeliness* was illustrated in the instructor dimension. *E-learning course flexibility* and *e-learning course quality* were included in the course dimension. The technology dimension factors were *technology quality* and *Internet quality*. Lastly, *perceived usefulness* and *perceived ease of use* were revealed in design dimension and *diversity in assessment* and *learner perceived interaction with others* in the environmental dimension. The researchers of this study attempt to integrate e-learning models with HIM in higher education. Additionally, there are limited numbers of detailed studies that examine the attitude of students who are using hybrid instruction model in developing country like Thailand. Then, the preliminary findings of students' attitude toward HIM of a Thai university revealed in the following section.

## 3. METHODOLOGY AND PRELIMINARY FINDINGS

The purpose of this study is to provide deeper understanding of the problem domain. Then, the exploratory and preliminary study was conducted using interviews. Revealing possible factors and theories would further develop conceptual framework. In-depth interviews of 15 senior students who used HIM from School of Communication of a university in Thailand were accomplished. These fifteen students were conveniently selected from five pre-determined courses from the university administration and one course of the interviewer. The students attended the hybrid course including 4.5 hours of lecture classroom meeting per week for 3 weeks (lecture supported with powerpoint presentations and books), 4.5 hours of tutorial classroom meeting per week for 2 weeks (groupworks, quizzes, homeworks, assignments, and projects), 4.5 hours of online information technology (IT) option 1' or 2' or 3' usage per week for 4 weeks. IT option 1's usage was the use of virtual classrooms with the capacity of 40 concurrent users along with video and voice command. IT option 2's usage was the use of the university's learning management system. IT option 3's usage was the use of large files' sharing between the instructors with their students. The same interviewer conducted these interviews in order to reduce

variance of the study. These interviews were largely guided by the interview protocol derived from the study's theoretical constructs. For examples, "what is your attitude toward the use of the university new method of instruction (HIM) in terms of perceived usefulness, perceived ease of use, and intention to use?" "Have you ever used IT number 1, IT number 2, or IT number 3 in this method of learning at all (HIM)? Please explain?" "Have you ever had problems with lecture classroom meeting, tutorial meeting, or the three options of online IT usage at all? Please explain?" "Is it a wise idea or a pleasant idea to use the system? Please explain?" "Are you satisfied in using the system? Please explain?" The interviews were conducted over three weeks from the 16 January – 3 February, 2012 during the second semester of the 2011 school year. Data were coded for common categories and patterns in order to reduce the information to meaningful categories. Disagreements in coding were discussed and the differences resolved. Evidence of each dimension from the qualitative data of the respondents was interpreted in Table 1.

TABLE 1: ANALYSIS OF QUALITATIVE FINDINGS

Respondents' Comments	No. of respondents mentioning	Theoretical Relevance
<ul style="list-style-type: none"> <li>○ I do use IT option 1.</li> <li>○ I do use IT option 2.</li> <li>○ I do use IT option 3.</li> </ul>	2 5 6 Total of 13	Availability of Environment ( <i>diversity in assessment and perceived interaction</i> ) from previous e-learning models.
<ul style="list-style-type: none"> <li>○ I can use IT option 1 with clear video streaming from my instructor.</li> <li>○ I can use IT option 1 with clear voice commands.</li> </ul>	2 2 Total of 4	Availability of Technology ( <i>technology quality and Internet quality</i> ) from previous e-learning models.
<ul style="list-style-type: none"> <li>○ I prefer to study in traditional instructional modes because I would like to have face-to-face interaction with my instructor especially when I have to study special software like Adobe Photoshop or Illustrator.</li> <li>○ I dislike the new method of teaching (Hybrid Instruction Model) because the instructors taught very fast, I have to study and read large course materials on my own, and instructors do not have enough time to answer every one.</li> <li>○ When we do not have mid-term exams, we have more class projects, a large amount of class activities' points, shorter class timelines, and too short face-to-face classes. It is disadvantage for me.</li> <li>○ We have not been able to have internship for summer period because we have shorter second semester and all companies already recruited their interns.</li> <li>○ We need to do film projects for our classes and we would like face-to-face interaction with our instructor.</li> <li>○ Many courses have the same class periods or the same class locations and we have been confused.</li> <li>○ I have to ride on the bus and on the van to travel between the university's two campuses for my classes. It has been inconvenient and expensive.</li> <li>○ I like the new method of teaching if the instructors would not lecture too fast. Now, we finish 3-5 chapters instead of 1 chapter per week. It is too fast for me to catch up.</li> <li>○ I have to wake up early to travel to classes.</li> <li>○ If there will be megaflood again, I can use online classroom systems.</li> </ul>	2	Availability of Environment ( <i>diversity in assessment and perceived interaction</i> ) from previous e-learning models.
	1	Availability of Course ( <i>course flexibility, course quality</i> ) from previous e-learning models.
	1	Availability of User Satisfaction/ Dissatisfaction from previous HIM studies.
	3	Availability of Instructor ( <i>response timeliness</i> ) from previous e-learning models.
	3	
	5	
	2	
	1	
	1	



<ul style="list-style-type: none"> <li>○ I like this new method of teaching (Hybrid Instruction Model) since I am a senior student and I can have more times to do my film projects.</li> <li>○ I like this new method of teaching (HIM) because I have more times to talk to my friends.</li> </ul>	2  4 Total of 26	
<ul style="list-style-type: none"> <li>○ I could download a large video clip to view by using IT option 3.</li> <li>○ I could use IT option 2 to download lecture files from my instructor.</li> <li>○ I could do online examination from my instructor through the use of IT option 2.</li> <li>○ I could submit my assignments to my instructor through the use of IT option 2.</li> <li>○ I could use the university's email system along with Hotmail or Live.Net.</li> <li>○ I did submit my online examination twice, but I kept getting error messages from using IT option 2. It was unsuccessful.</li> </ul>	1 2 1 2 2  1 Total of 9	Availability of Design ( <i>perceived usefulness and ease of use</i> ) from TAM and its extension.  Availability of benefits and obstacles of HIM.

Note: The number of respondents mentioning refers to the number of participants who provided one or more of the responses shown in each respective category. Some respondents' responses fit more than one category.

#### 4. CONCLUSIONS, RECOMMENDATIONS, AND FUTURE WORK

This study provides data in an initial attempt to integrate e-learning models, moving toward the model of Hybrid Instruction Model (HIM) in higher education in a Thai university. Participants rated use of HIM in terms of Design (*perceived usefulness, perceived ease of use, advantages, and disadvantages*) both positively and negatively. The respondents' comments in design dimension are consistent with previous researches in TAM, e-learning model, HIM in higher education (Cavus, 2011; Davis, 1989; Delialioglu & Yildirim, 2008; Oliver, 1980; Sun, et al., 2008). Then, the four factors in design are likely to be factors affecting HIM learning outcomes. Moreover, the result raised important issue and provided insight how *technology quality* and *Internet quality* may not be an issue in using HIM (Sun, et al., 2008). *Diversity in assessment* and *learner perceived interaction with others* are likely to be factors in environmental dimension for HIM (Daneshgar, et al., 2010). Many students perceived that instructor response timeliness could be an important issue in HIM learning. Interestingly, HIM courses did not seem to be flexible since students must invest time and money to travel to classes and still got lost due to confused class periods and locations. The student seemed to perceive *course quality* negatively since they needed to study too many materials per week. Additionally, students were unlikely to have problems with *computing attitudes* such as *computer anxiety* and *Internet self-efficacy* since they had gone through many computer related courses before their senior year and they seem to receive enough instructions of how to use the different IT options. User satisfaction and dissatisfaction are also related to the effective implementation of HIM (Daneshgar, et al., 2010; Delialioglu & Yildirim, 2008; Oliver, 1980; Vernadakis, et al., 2011). Then, *diversity of assessment, perceived interaction, course flexibility, course quality, user satisfaction, response timeliness, perceived usefulness, perceived ease of use, benefits, and obstacles* can be factors affecting students' attitude toward HIM. The only preliminary interview results of this study may cause some readers to question the value of incorporating TAM, EDT, and e-learning models into HIM. The conditions for best promoting HIM success have not yet been fully explicated. This study provides insights for university administrators, educators, students, and other stakeholders to strengthen their HIM implementation and further improve learners' satisfaction. Limitations of this study are limited time and resources to interview more respondents from more schools and universities Thailand and Southeast Asia. Additionally, this work focuses on metrics from a specific HIM program of a university in Thailand; therefore, the variance in different systems is not further investigated. Not only attitude of students, but also attitude of instructors toward HIM is likely to affect learning outcomes. Then, attitude of instructors should be further explored. Future research might incorporate more variables and examine variance across different HIM learning methods.

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## **FRAUD PERPETRATED BY ELDERS**

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### **ABSTRACT**

*Fraud is perpetrated by many age groups. Fraud or white-collar crime is not limited to the young. When people discuss fraud by elders the thought is that fraud is done to elders.*

*This paper will describe the elderly fraudster, the kinds of frauds perpetrated, how it is done and why they choose to commit fraud.*

*There are many cases provided where fraud is perpetrated by elders to others.*

### **1. FRAUD IS AGELESS**

Fraud has been in existence for centuries. The ancient Greeks had laws against fraudulent behavior. Today fraud, or white collar crime, has become an epidemic. We now have specialists who fight fraud. There are professional groups such as the Association of Certified Fraud Examiners who provide training to detect and deter fraud. Anyone can be a victim of fraud. Anyone can commit fraud.

When we think of fraud and the elderly, we think of them as easy prey. They certainly are. The elderly are rarely thought of as the perpetrators of fraud. Although as a group the elderly are a small part of those committing fraud, there are many cases of those crimes. The number of elderly lawbreakers in the Netherlands is up by 85% almost double in the last 12 years. This paper will focus on: who they are, what they commit, how and why they commit fraud. In addition, a number of case summaries will be provided.

### **2. WHO ARE THE ELDERLY**

AARP (American Association of Retired Persons) allows individuals to join at the age of 50 years old. At 62 years of age and individual can start collecting Social Security payments. When an individual is 65 years of age they can start receiving Medicare. The criminal justice system often classifies those 55 years of age and over as elderly (Newman 1984). White-collar defendants tend to be older than those convicted of other federal crimes. Almost half of all defendants sentenced last year for tax offenses and money laundering were older than 50 years of age (Daily Herald 2011). The cases presented in this paper focused on anyone 50 years of age and over as elderly.

### **3. TYPE OF FRAUDS PERPETRATED**

There's a wide variety of fraud that can be perpetrated. The cases we hear about the most are those of large corporations and heads of large corporations committing fraud. The types of frauds that have been committed and presented in the cases that follow are:

- Embezzling
- Insurance fraud
- Stolen identification
- Ponzi schemes
- Bank fraud
- Mail fraud
- Mortgage fraud
- Fraudulent financial reporting
- Bankruptcy fraud

Money laundering  
Healthcare fraud  
Securities fraud  
Student loan fraud  
Aiding and abetting fraud  
Making false statements to federal government agencies

As the criminal ages type of crime can evolve, with crimes such as embezzlement, and fraud being unlimited by age (Kastenbaum 1993). Even organized crime is an old man's game (Newman 1984).

#### **4. HOW THEY ARE ABLE TO DO IT**

Fraud involves deception. Person must have confidence in the individual. The more respectable a person appears to be the more likely they are to be trusted. The more respectable a person appears to be the less likely they will be suspected of committing serious crimes (Friedrichs 1996). An elderly person may seem more trustworthy, therefore an individual may be more prone to be a victim of an elderly person and the younger one. Elderly people today are healthier than in the past and in many cases stronger because they are more physically fit. As more people lead longer, healthier lives, they are fitter and have fewer disabilities than was true a generation ago. So it is not surprising to see an older person doing what a younger person would do, including being violent.

#### **5. WHY THEY DO IT**

Why do elders commit fraud? In later life, crime may be committed because of the sense of lack of power, a lack of self-esteem, and self-preservation. Are the aged shoplifters, for example, those who earlier in life cut corners on integrity, and had a philosophy that end justifies the means? (Newman 1984) In Japan 25% of apprehended shoplifters cited loneliness as the motive for their crime (Yglesias 2009). Other reasons elders commit fraud may be lack of ethics and integrity. Another may be fear of punishment. They may fail since they are old they may not be punished in the same manner as a younger person. A few of the elderly fraudsters may be predatory such as Bernie Madoff. Fraud committed at the corporate level is usually white-collar criminals considerably older, which might be expected since it usually takes longer to get into managerial positions or other positions of confidence.

Other reasons why elderly may commit fraud can be viewed in the "Fraud Triangle." The fraud triangle is a concept that states that you need three things to commit fraud: pressure on the individual, the opportunity to commit fraud and rationalization that tells the person it is okay to commit the crime because there is a good reason.

Some pressures may be: greed, living beyond one's means, high personal debt, high medical bills, personal financial loss, and some unexpected financial needs.

The opportunities that give the elderly the ability to commit fraud may be: people trust them because they are in fact elderly and appeared trustworthy.

Some rationalizations it may cause the elderly to tell themselves fraud is okay maybe: the world owes it to me, I'm only borrowing it and I will pay it back, nobody will get hurt, I deserve more, it is for a good purpose.

#### **6. CONCLUSION**

There is an old saying "youth is wasted on the young." Fraud is not reserved for the young. The elderly can and do commit fraud. It may be easier for them as a group to perpetrate fraud



because they may seem more trustworthy and sympathetic. Why would "Grandma" or "Grandpa" embezzle from me? It can and does happen.

#### **CASES:**

##### Number one

###### **Elderly Women Charged With Fraud**

A federal grand jury indicted two elderly women ages 75 and 73 of befriending transient man and collecting on life insurance policies worth \$2.3 million after the men died in it and run crashes.

##### Number two

###### **Elderly Man Robs Bank**

Authorities say a well-dressed man carrying an oxygen tank robbed a bank in La Jolla section of San Diego. The robber was described as tall, in his 70s with white hair a gray mustache and glasses.

##### Number three

###### **California Man Sentenced In Stolen Identity Scam**

A 61-year-old California man was sentenced Thursday for organizing your fraud ring that attempted these stolen identities to make cash withdrawals from banks. He received four years in prison and four years on supervised release after his conviction on charges of aggravated identity theft and bank fraud.

##### Number four

###### **Rock Hill Man Indicted For Ponzi Scheme**

Mr. Sullivan, 63, recently pled guilty to mail fraud in connection with mail fraud in a multimillion dollar decades long Ponzi scheme in which he took approximately \$2,512,978 from unwitting investors.

##### Number five

###### **E. P. May Indicted in \$200 Million Ponzi Scheme**

Mr. May age 74 pleaded guilty today 1259 counts of mail fraud.

##### Number six

###### **Arlington Man Sentenced**

Mr. Pinkett age 70 was convicted of \$40 million Ponzi scheme and sentenced to 36 months in prison. He is also ordered to pay \$19 million in restitution.

##### Number seven

###### **Texas Woman Sentenced With Foreclosure Prevention Scheme**

Mrs. Divins, 55 years old, was ordered to pay \$83,000 in restitution and sentenced to three years of supervised release after serving her prison term of 350 months in federal prison for criminal contempt and mail fraud.

##### Number eight

###### **Man Sentenced In Southern Oregon Counterfeit Treasury's Case**

Mr. Buhtz, 70, was sentenced today by US District Court to 36 months in prison for his conviction in a counterfeit treasury's case guilty of conspiracy to pass approximately \$3.8 million in false U.S. Treasury instruments and multiple counts of passing fictitious financial instruments.

##### Number nine

###### **Illinois Woman Sentenced In Embezzlement Scheme**

Linda Connor, age 54, was sentenced to serve 36 months in federal prison for her convictions on a two count indictment charging her with filing a false federal income tax return and Ms. application of property. She was additionally ordered to pay restitution to the village in the

amount of \$370,000 and to the IRS and the amount of \$60,000. The embezzlement of funds contributed to the village having to file bankruptcy in July of this year.

Number 10

Resident Sentenced

Edward, 71 was sentenced yesterday to more than four years in federal prison for engaging in the fraud scheme during which he received funding from multiple sources to assist him in purchasing and Inn. He provided fraudulent and false documents to borrow \$1 million.

Number 11

Oregon Executives Sentenced

Bryant, 63, and Larry, 63, were sentenced today and both pled guilty in June 2009 to money laundering in connection with a scheme to defraud thousands of investors.

Number 12

Defendants Sentenced In Healthcare Fraud Scheme

Joseph, age 80, and George, age 58, were sentenced on charges of healthcare fraud.

Number 13

CFO Pleads Guilty In Connection With \$7 Billion Fraud Scheme

James, 60, former CFO pled guilty today to fraud and obstruction charges related to a \$7 billion scheme to defraud investors. He was also charged with criminal conspiracy to commit mail, wire and securities fraud. He must forfeit up to \$1 billion in fraud proceeds.

Number 14

Man Sentenced For Running \$55 Million Investment Fraud Scheme

Colin, age 62, was sentenced to 27 years in federal prison for bilking hundreds of victims out of approximately \$55 million.

Number 15

Auto Dealer Sentence For Bank Fraud

Johnny, age 65 with sentenced to one year in nine months in prison for bank fraud. He was ordered to pay restitution in the amount of \$236,000.

Number 16

Woman Sentenced in \$2.4 Million Security Fraud Scheme

Beverly, 65, of Bellevue, Washington, was sentenced to seven years in prison for her role in a pump and dump securities fraud scheme in which more than 3300 investors lost over \$2.4 million. She was ordered to pay \$2.4 million in restitution.

Number 17

Fraud Conspirator Sentenced To Two Years In Prison

Mr. Z, age 62, was sentenced today to 24 months in prison for one count of fraudulent applications to the federal government and two counts of money laundering and one count of conspiracy.

Number 18

Leader of \$73 Million Ponzi scheme Sentenced To 30 Years In Prison

John, 66, was sentenced today to 30 years in prison for leading what prosecutors call the largest Ponzi scheme ever prosecuted in the Western District of Washington. He promised investors a return of 120% per year told investors are principal was insured against loss. Prosecutors and a court-appointed receiver were able to locate about \$25 million of the money taken by the fraud, and it was returned to investors who received about \$.40 for each dollar they had invested.

Number 19

Architect Pleads Guilty To Obstruction Of Justice

Joyce, 76, pled guilty yesterday on charges of aiding and abetting and obstruction of justice.

Number 20

Three Seattle Area Women Sentence For Bank Fraud Scheme

Three family members were sentenced this morning in connection with a bank fraud scheme that abused student loan programs. The mother, age 60, was charged with aggravated identity theft. She stole people Social Security numbers and identification information from the clinic she worked to apply for \$2 million of student loans.

Number 21

Elderly Fraudsters Jailed For Scam Sale Of Thai Royal Family's Former Land

Four elderly men, ages: 71, 65, 62 and 69, has been jailed for over five years in a \$8 million scam involving a plot for sale of land that was formerly the home of the king and queen of Thailand.

Number 22

Elderly Escrow Officer In Texas Sentenced

Helen, age 71, was sentenced to 42 months in prison plus restitution for embezzling some \$1.2 million from Lawyers Title Insurance Corporation where she was employed. She pled guilty to mail fraud charges and admitted the embezzlement. She misappropriated funds from client escrow accounts over nearly a six year period. She reportedly wrote more than 160 checks to pay her personal credit card bills and to fund another business of hers.

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## A CRITICAL SUCCESS FACTORS MODEL FOR IMPLEMENTING AN E-LOGISTICS SYSTEM

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### ABSTRACT

*The key to sustain the presence in global markets and increasing the competitiveness is to use the information and communication technologies -such as Internet- and generate integrated systems such as e-logistics (electronic logistics). The successful implementation of an e-logistic system is convenient because it provides the mechanism to automate traditional logistics processes, beside of visibility and real-time synchronization over a network of collaborators. On the other hand, the critical success factors (CSFs) play an important role in this ambit, due to the fact they are the engine that encourages and engages the adaptation capability during the planning stage and implementation of a project. Through correct identification of CSFs, strategies and action lines can be established focusing on the most important aspects and prioritizing those actions, develop a proper application of the necessary means and resources in order to generate competitive advantage. This article proposes a conceptual model of critical success factors for implementing e-logistics system, to provide guidance to support decision-makers and identify those factors that have a strong impact on their performance.*

**Keywords:** Critical Success Factors, e-logistics system, e-business, conceptual model

### 1. INTRODUCTION

In an e-business (electronic business) environment characterized by globalization and advances in information and communication technologies (ICTs), one of the key factors for business performance is the role of logistics operations, so logistics is recognized as a critical factor for the competitive advantage (Sum, Teo and Ng, 2001). The new economy focuses on the competencies of the organization, generating real-time information, visibility, collaboration and the development of e-logistics (Gunasekaran, Ngai and Cheng, 2007). The growth of e-logistics is essential to successful global operations (Aldin and Stahre, 2003) and the identification of the CSFs in this sector.

The process of logistical decisions making in e-business has important economic and financial impacts, not only along the supply chain, but also impacts in the field of business investment and often mark the success or failure of these (Shen, 2009). So it is essential to consider the proper identification of CSFs, in order to provide support for strategic planning of operations and the minimum resources necessary for the development and implementation of projects, defining the key areas of the company, facilitating the implementation of activities according to the priority of the same (Rockart, Ball and Bullen, 1982).

In relation to the CSFs for the implementation of an e-logistics system, no studies have been conducted (only one by Gunasekaran, Ngai and Cheng) that holistically integrate and identify them. To date, the proposals have been focused on partial studies of the dimensions that make up a system e-logistics (Gunasekaran, et al., 2007). This paper shows a proposed conceptual model of CSFs for the implementation of an e-logistics system, which provides a guidance to decision makers. Not consider or omitting certain factors can be the difference between the success and the failure of a project, without neglecting the importance of the human element and its implications.

### 2. LITERATURE REVIEW

E-business has generated significant changes in management to the point of having nowadays products and services increasingly personalized and real-time information, so understanding the scope and the e-business environment is important because it helps businesses make decisions and set objectives (Matopoulos, Vlachopoulou and Manthou, 2009; Zhu, Kraemer and Dedrick, 2004). In the next years, the successful companies will be those that restructure their organizations, their process and their

technological infrastructure for a successful execution of e-business (Grozniak, 2005). One of the core parties in e-business is logistics (Xu, Wilkinson and Brouthers, 2002), thus, the growth of e-business gave to the logistics a greater importance so that e-logistics has won ground and the experience indicates that ICTs are an essential tool for logistics operations (Gunasekaran y Ngai, 2004).

E-logistics is an expression on the application of ICTs on logistics processes, besides is being considered as a key factor for the successful of e-business (Scholz-Reiter and Höhns, 2003). Researches around the identification of CSFs have been made in several application areas related to e-logistics (Azimi and Sobhan, 2010; Colmenares and Otieno, 2008; Gard, 2010; Gunasekaran and Ngai, 2004; King and Burgess, 2006; Mendoza, Marius, Pérez and Grimán, 2007; Ngai, Cheng and Ho, 2004; Power, Sohal and Rahman, 2001; Rahimi and Berman, 2009; Reza, Cheshmberah, Mehdi and Hadizadeh, 2011). However, in this scenario it can be perceived that CSFs, as a culture and trust, had been neglected by researchers and practitioners. By the other hand, the literature related to CSFs for the implementation of an e-logistics system is individually focused to elements that make up an e-logistics system, as Customer Relationship Management (CRM) in Rahimi and Berman (2009), Wilson et al. (2002) and Zablah, Bellenger and Wesley (2004); Supply Chain Management (SCM) in Power et al. (2001) and Ngai et al. (2004); Enterprise Resource Planning (ERP) in King and Burgess (2006); Partner Relation Management (PRM) in Vlachopoulou et al. (2005).

In this sense, the state of the art around CSFs does not provide enough information to the stakeholders allowing them to participate more actively about implementations or development projects (King and Burgess, 2006). Otherwise, the research of CSFs for the supply chain management in a virtual or electronic environment has not been recognized by professionals in this field, due to lack knowledge of ICTs and its benefits (Ngai et al., 2004).

### **3. PROPOSED CONCEPTUAL MODEL**

The identification of CSFs in different areas related to the dimensions of the e-logistics system proposed by Gunasekaran et al. (2007), are the result of the review of the literature; in relation to the topics on the agenda of research and development for logistics in e-business, Auramo et al. (2002) consider that future research should focus on the flow of information, supply network and the physical flow of materials, so they have been taken into account in the proposed model. In this sense, in the implementation of an e-logistics system requires the integration and commitment of all internal areas involved, as well as the external participation of the parties in the network of suppliers, trading partners and logistics operators, among others. The proposed conceptual model integrates the critical success factors identified in the literature and others like the human factor, the level of technological infrastructure and the establishment of an online community that are considered relevant because of its impact.

#### **3.1 Model Elements**

The proposed conceptual model consists of four main elements (see figure 1) which include:

- ✓ Organizational infrastructure: The technological level of the company is the basis of an e-logistics system for the managing of enterprise networks, human resources and the own technology to ensure the integration of the technologies for the collaboration in e-logistics and e-business (Scholz-Reiter and Höhns, 2003), bottom's figure 1.
- ✓ Implementation process: The phases of the system contemplate project management, strategic planning and the internal and external integration of the actors along the network of collaborators and supply chain in order to link the CSFs to those stages (Wang and Chen, 2006), central portion of figure 1.
- ✓ E-logistics system: Includes four dimensions: strategic planning, alliance management, the use of information technology and inventory management, which are interdependent and have been identified as e-logistics facilitators (Gunasekaran et al., 2007).
- ✓ Critical Success Factors: This section is the core of this proposal, which follows.



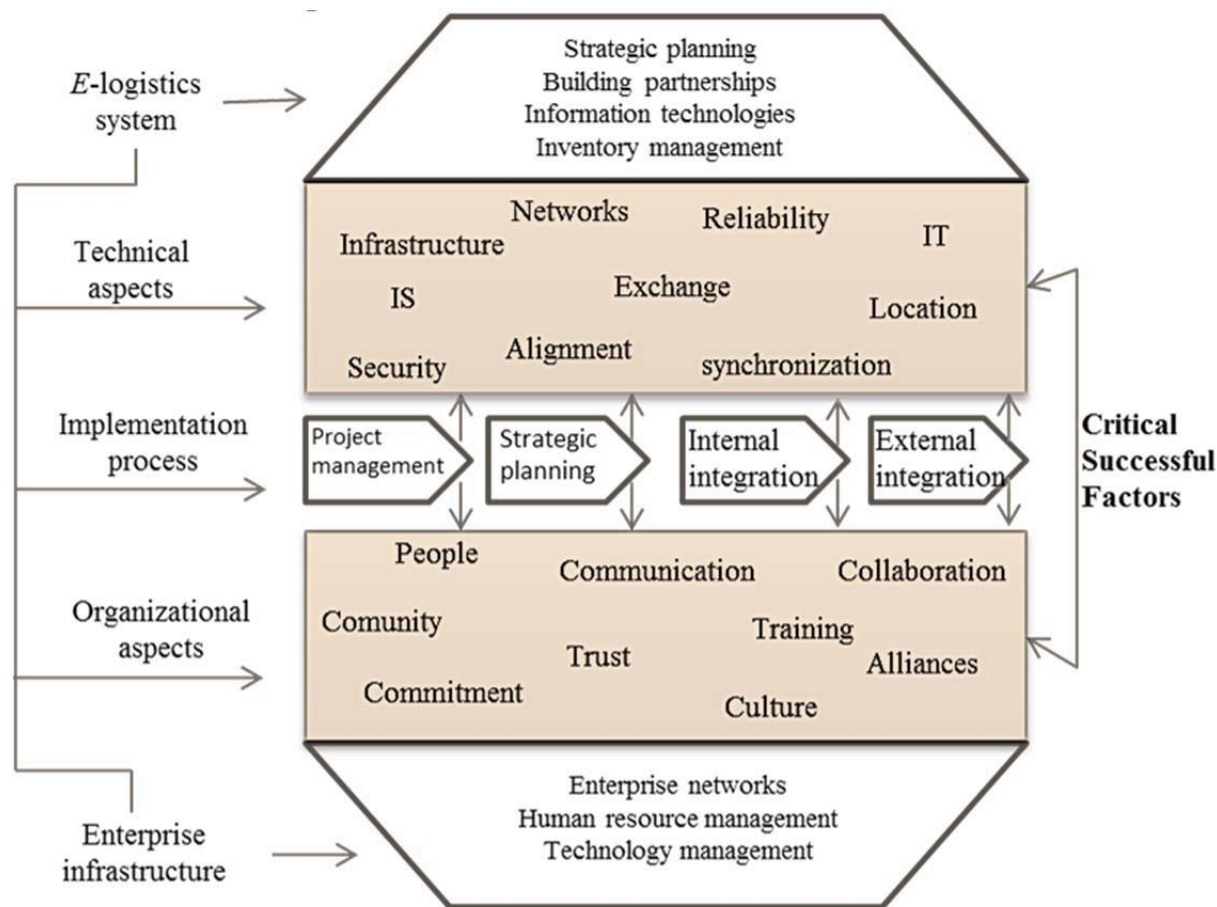


Figure 1. CRITICAL SUCCESS FACTORS PROPOSED MODEL

### 3.2 Critical Success Factors

The critical success factors have been classified in two ways: Organizational aspects and Technical aspects (figure 1), this way we can show a better understanding about FSCs in this proposed model.

- **Organizational aspects:** Referred to the establishment of policies and collective goals between the internal and external members willing to share risks and benefits. They are:

- *Commitment and communication:* The commitment of senior management has been recognized as a key element to provide financial support and deployment of the necessary resources for a successful implementation, besides ensuring that the project has priority and constant attention in the organization (Gard, 2010; Ngai et al., 2004). An open and effective communication across different areas of the organization (internal and external), ensures a clear understanding of goals and objectives to be achieved (King and Burgess, 2006).
- *Training and culture:* An adequate training at all levels is important for the effective use of tools and technological resources to use, as well as the change management is a requirement to prepare human resources and existing infrastructure in the organization to align with the objectives of the system (Rahimi and Berman, 2009; Reza et al., 2011). Consider the entrepreneurial and social culture of each company that integrates the online community is important to avoid conflicts that may affect the performance of the same.
- *Alliances, collaboration and trust:* The degree of infrastructure, facilities and technologies shared by the partners will depend on your needs and set the rules together, so they can

collaborate and compete at the same time in order to be more competitive. A partnership is a business relationship based on mutual trust, the sincerity, shared risks and rewards, offers a competitive advantage greater than that obtained when working individually (Vlachopoulou et al., 2005).

- *Community*: The formation of a community network is essential to build trust, collaboration and commitment among its members in order to align objectives and common goals.
- *People*: the human factor has an important role because of its implications around in the process of adaptation before and during the development of an implementation.

- **Technical aspects**: focused on the integration and development of processes that improve the operational synchronization and the interrelationship between suppliers, distributors, costumers and others. They are:

- *Reliability and security*: Reliability and technical support of the software and hardware are essential to guarantee the system performance and to ensure the data accuracy (Ngai et al., 2004). The security and confidentiality of the information between the parties is a priority for internal and external exchange of data over the network (Reza et al., 2011).
- *Alignment and synchronization*: The alignment and synchronization of key processes in the system, allows the visibility of the information as well as the coordination and integration of mechanisms to manage logistics processes successfully across the supply networks (Romano, 2003).
- *Information Technologies (IT) and information systems (IS)*: The use of new IT and IS has led the redesign and operational execution of companies in a different way to traditional, especially those processes related to the flow of information in real time to ensure a proper flow of physical materials through the different network channels (Scholz-Reiter and Höhns, 2003), those factors have a strong impact throughout the supply chain companies and their logistics operations (Grozniak, 2005).
- *Networks, exchange and location*: The exchange of information in real time among network members and the visibility in the channels of the same. It is important to consider the location or localization of the facilities of the company to manage transport networks, suppliers, distributors, etc. in order to achieve an interactive and synchronized environment.
- *Infrastructure*: The technological infrastructure or technological level used by companies to implement an e-logistics system is critical, because it requires information systems and technologies that can provide internal and external support between the network communities.

This model requires the integration and commitment of everyone involved in the network of suppliers, logistics operators, business partners, etc. to create a focused community towards the same goal.

#### 4. CONCLUSIONS AND FUTERE RESEARCHES

The FCEs should be considered before and during the implementation process because they provide relevant information to achieve the objectives. This way, the CSFs are essential as a competitive strategy. Not taking into account the FCEs, can be the first step towards failure. The key factor in the implementation of an e-logistics system is to develop an online community with appropriate technologies based on the internet and to establish long term relationships with mutual benefits among the community; however, the most companies show distrust to share information, resources and technology, which is a barrier to their growth. Recognizing and considering the CSFs of the environment in which an organization is performed, enables significant advantages over its competitors. This research is part of a larger project consisting of two phases. This first stage aimed to establish an initial conceptual model for the implementation of FCEs in an e-logistics system; the next phase is to conduct empirical research to evaluate the FCEs results of this research.

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# VALUE ADDED? ECONOMIC RETURNS ON SPANISH LANGUAGE PROFICIENCY

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## ABSTRACT

*This paper discusses the economic value of Spanish language as has been determined by scholars of business and economics. It provides definitions and a literature review on the topic.*

**Keywords:** *Economic value of Spanish language, cultural competency, market and labor demographic, econometrics*

## 1. INTRODUCTION

### 1.1 Introduction

Linguists have been raving for years about the added-value of professions in, and diplomas of, foreign language. Moreover, foreign language skills can be a complement to content-based career choices and often correlate with outstanding academic achievement. Conversely, the economic value of Spanish, or any language for that matter, as a first or second language has yet to be fully appreciated. Recent conferences and research have begun the process of laying bare the potential material, intellectual, and cultural benefits of Spanish, in the comprehensive sense of the word [language], defined as the complex system of linguistic structures for communication taken in concert with imbedded cultural attributes of a society or the group of people who use it. Today there are over 500 million speakers of Spanish, and it is ranked second, after Mandarin, in the world in terms of numbers of overall native and acquired language speakers. In 2009, Hispanics made up 16 percent of North America's population; furthermore the Pew Research Center has forecast a surge to 29 percent by 2050. With the earth's human population at 6.9 billion in December of 2011 according to the World Bank, this global ranking of Spanish speakers indicates it may be useful to consider the commensurate economic value one might ascribe to the language.

The question we examine here is: Has the value of mother-tongue fluency or the acquisition, mastery, and usage of the Spanish language in today's global marketplace been calculated? This paper delves into the determination of "value" of a language, with the caveat of postulating the question primarily from the perspective of economics and business, or the benefit cost and return on investment of ostensibly "knowing" Spanish (whether native speaker or acquired skill), and consequently being a proficient, culturally competent speaker of the language. The discussion provides a qualitative exposition of how economists and business people would compute this value and what the current research has ascertained on the subject to date.

A literature review of the topic "economic value", "economic impact" or "return on investment of Spanish" reveals little academic exploration of the subject. Finding a few concrete studies that discuss the issue, the most salient outcome may be to provide an outline of the key areas illuminated by the literature review. Therefore this paper is structured around two areas: tracing the various means by which economics and business scholars posit the utility of this good, and secondly, a literature review of the sparse scholarship available on the subject. The summary of the key areas of research will enumerate both quantitative as well as qualitative findings, however this paper is qualitative in nature. As a conclusion, I suggest areas for future research that may further this pursuit.

### 1.2 Economist's approach

Generally, in economic terms, the value of a good or service could be circumscribed by usage or exchange, the price it brings in an open and competitive market (Weintraub, 1993), the amount of discomfort/labor saved through the consumption or use of an object or condition (Weintraub, 1993), and/or choices and tradeoffs consumers make based on income and time. There is some overlap with



financial valuation in the economic approach, though economics goes much further in assessing value by including “every accountable item in a financial valuation plus any costs and benefits which do not affect financial results, but affect or will affect positively or negatively the wider economy” (Queensland Gov, 2003).

Because economists consider language skills as a form of human capital, they apply a human capital equation that includes language competency for analysis of determinants of wages and/or other people-related corporate human resource expenditure. Barry Chiswick defines human and physical capital as “Anything that is productive is a resource—sunlight, plows, and language skills. To be capital, however, there must be costs for it to be produced or acquired. Thus, sunlight is a natural resource, not capital, while plows and language skills are capital. Capital is of two types, physical and human, depending on whether it is embodied in the person” (2008, p.6). Thus one possible approach to measuring economic value of language may be found in human resource management, which is corroborated in the literature.

Finally shifts in the global and US employment structure of the economy as well as displacement in employment by industry and occupational groups are radically transforming the labor market. Thus labor market econometrics that analyze wage premiums paid for bilingualism, exclusive Spanish fluency or the viability of employment without the language proficiency add-on may contribute to this assessment.

### 1.3 Marketing/business approach

As a corollary, another discipline--marketing--can provide a measure of tangible financial value of Spanish as a commodity. One measure can be taken from the purchasing power parity of Hispanics in US 2003 \$653 million, anticipated to increase to buying power of \$1 trillion in 2010- and by 2015 \$1.3 trillion (MarioWire Politics, 2011). A business perspective would try to assess the size and attributes of the market, specifically honing a target market of the consumers of this service (Spanish speaking skills), and then analyze the specific market segmentation. An examination of geography, demography, customer type and psychographics provides some baseline in terms of who the consumers of this auxiliary service are, that in the case of speaking a language is not strictly limited to linguistic aptitude rather an added-value skill to any profession where the consumer requires a service, but would not ordinarily have access to said service because of language barriers. The ability to speak Spanish would be of added value in that it augments the market size of the consumer-base of a service rendered. This type of approach entails research on specific demographics pertaining to labor statistics or population attributes of the consumer and labor market broken out as--1) growth areas in populations and markets where Spanish could potentially be exploited; 2) shifts in size and composition by ethnicity of the multicultural labor force.

## 2. LITERATURE REVIEW

In theory, the economic benefit of bilingualism could be said to be:

“fluency in both languages can widen the range of commercial and service opportunities in both ethnic and general markets (Portes and Rumbaut, 2001). Second, businesses in the global economy want to hire workers with multiple-language skills who can navigate international markets readily. Finally, the increasing immigrant population will raise the demand for bilingual workers, especially in the public sector, to serve non-English speakers (Waldinger and Lichter, 2003).” (Shin, 2009)

From a fairly comprehensive literature review within the fields of economics and business, there emerge several branches of inquiry on “added value” for bilingual or Spanish speaking individuals in society. The academic articles can be divided into the following areas where Spanish would either be crucial for satisfying employment criteria, and/or is intrinsically germane to the activity, income generation or a form of collateral power: US national security and global security (defense initiatives, narco-traffic contravention, gang containment, terrorism); the health care industry (providers, communication and complementary services, such as insurance, pharmaceuticals, health and medical sciences); interpreter and translator services (courts, business, hospitals, government services etc.) (NEA, 2007); hospitality, education, business, law enforcement, social services, finance, customer service or government (Balderrama, 2008).

The Committee for Economic Development provides anecdotal information highlighting foreign language skills and cultural competency as critical for meeting the “challenges of the twenty-first century in our economy, national security and multicultural society” (Committee for Economic Development, 2006); hailed as a supporting pillar for sustained future US economic competitiveness. In “The Economic Impact Of The Hispanic Population On The State Of North Carolina” (Kasarda, 2006) the authors develop precisely that rationale. The report calculates the monetary import of translated legal documents for fomenting entrepreneurial endeavors in the state, immigrant Spanish-speaking laborer contributions, as much as Foreign Direct Investment (FDI) and Latin American exports, which would increase State business revenue and total economic impact as a result of usage of Spanish language.

The fastest growing sectors of the US industrialized and globalized information age economy, according to the Bureau of Labor Statistics, are in the service industry (healthcare and social assistance, professional, scientific and technical services, educational); in those sectors Spanish speakers will be rewarded by the marketplace, as the research has started to verify (Occupational Outlook Handbook, 2010-11).

Abroad, according to Alonso (2010), Spanish contributes to the economy of Spain, tantamount to 15% of the GNP, similar to tourism and construction representing one of the three fundamentals of the inner economy of Spain.

Organizations, like the InterAmerican Development Bank, Cervantes Institute of Chicago, or Spain's Telefonica, have sponsored fora on the topic of late, resulting in published reports or video taped speeches. One such presentation, entitled “the Economic value of Spanish”, emphasized: education-- receipts in terms of number of students, training linguists or teachers, translators; culture and leisure associated with Spanish -- publishing, tourism and audiovisuals, media; cultural services, entertainment and sports-- companies providing services in tourism; informational technology and communication in Spanish (Cervantes Institute, 2011). Others underscore the rise in demand for bilinguals in the retail sector, transport, public relations, banking, administration, secretarial work, marketing and sales, politics, and the law (National Research Council, 2007). Nonetheless these studies do not quantify monetary sums as much as outline the general framework of areas with greatest demand.

The education market value, in terms of students, is estimated by the Cervantes Institute at more than 14 million worldwide; whereas a distinct group determined an upper limit of the net market of 100 million people studying the language (Cortina, 2009). In “What is it worth?” from CEW Georgetown, median salaries for students with a Bachelor's degree in Humanities and Liberal Arts are \$50,000 (Carnavale, 2011), suggesting a return on investment for college graduates in any field, with a minor, major or supplemental coursework in Spanish, can earn a minimum average salary of \$48,000 for French, German, Latin, and other common foreign languages, though \$3,000 more on average for Spanish (Carnavale, 2011).

As noted above, the fastest growth segment in the US economy is health care, where bilingualism or Spanish proficiency is being evaluated and positively appraised. Copeland et al (2011) recommend training physicians with Spanish in order to improve patient satisfaction and decrease costs of interpreters. Patient satisfaction correlates with more business, and obviously eliminating a translator middleperson reduces time and cost of appointments for patients, increases efficiency, and attracts more customers as well. Based on Mazor et al. (2002) who analyzed the impact of teaching Spanish to pediatric emergency medicine physicians, the findings provide policy recommendations, but point to the economic value of speaking Spanish for diminishing overhead costs and increased revenues.

In the US, the preponderance of foreign language immigrants, and punitive English-only legislation transforms the debate toward consideration of the costs of non-English within the Hispanic demographic mentioned above. Indagation of return on investment of language skill expenditures for the government or immigrants is the prominent approach. Barry Chiswick, an economist with a robust portfolio of research on economic value of language in immigrant populations (over 20 articles), in his 2008 discussion paper propounds language proficiency as part of the human capital equation, explicitly imputing language skills

among immigrants and native-born linguistic minorities as quantifiable. The report assesses labor market consequences of language skills in terms of higher earnings premiums, “lower costs of consumption, greater political involvement and larger social/communication networks” (Chiswick 2008, p. 6). Likewise, Alonso and Gutiérrez in *Emigration and Language* (2010) investigated the interstice between labor markets and Spanish language in the economy of Spain and US labor market; concluding in summaries of most of the available research, that there is empirical data to support a measurable monetary effect on salaries.

Research on the economic impact of official language policy elucidates the superior value of bilingualism in employees, and assesses earnings premiums rewarding English language competency in the public/private sectors of metropolitan areas. Overall having even limited language proficiency and competency skills correlates with higher salaries, though only 3 percentage points over base non-bilingual (Alonso & Gutiérrez, 2010). Of the studies focused on Spanish, few refute the notion of a yield in language earnings premium, nonetheless lower managerial rank can be observed to have a differentiation effect. However, Alonso (2010) found a negative correlation between bilingual skills and salary only in certain sectors and based on degree of responsibility or status in the organization. For non-supervisory positions in the industrial sector, a positive correlation exists, but for administrators the result was negative. In the public sector, the same negative effect occurs for supervisory positions. His findings show the highest correlation exists for those participating in the labor force that deals with Latino markets, where English only would not be sufficient to ply one’s trade.

Cortina, De la Garza and Pablo Pinto (2009) found that bilingualism among Hispanics in the U.S. leads to higher wages- with the income level of bilingual Hispanics 2.7 percentage points higher than the income of those who only speak English – after accounting for variables like education, occupation and region of employment. Likewise Chiswick (2008) has calculated a premium as well as other contiguous labor-market benefits from language proficiency amongst immigrants.

The highest salary correlation with bilingualism occurs in the education sector (not surprisingly), healthcare support occupations, protective service occupations, food preparation, and serving occupations (Alonso & Gutierrez, 2010). Empirical studies on the outcomes of bilingualism or consequences find an economic payoff of bilingualism (Fry and Lowell, 2003; Shin, 2009) though both studies through distinct reasoning negate a tangible economic return for bilinguals in the labor market. Whereas Chiswick and Miller (1999) found that earnings were higher by 8% for men (legal aliens from database of Legalized Population Survey) and 17% for women who are both proficient in speaking and reading English, compared to those lacking those skills.

### 3. CONCLUSION

Though the economics have not been thoroughly explored, there are already a number of substantive studies indicating that Spanish has a monetary value and positive return on investment. Future research will be focused on the myriad emerging industries, professions and occupations where the language will be indispensable. Samuel Taylor Coleridge said: “Language is the armory of the human mind, and at once contains the trophies of its past and the weapons of its future conquests.” Let us hope that with more research, the true and comprehensive, multidimensional value of Spanish and speaking a foreign language will be appreciated.

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# ROMANIAN FOOD INDUSTRY UNDER MAGNIFIER: BETTER LOOK BETTER UNDERSTANDING

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## ABSTRACT

*The potential of Romanian agriculture and food industry is huge. This sector confronts many problems and needs market for its products. Investments from European funds were made in the production capacities and in quality of products. But there is no correlation between agriculture's output and food industry capacity of absorption, from a territorial perspective. Also, there is no correlation between food industry production capacity and consumers. The analysis of some important productions and ranking the productions capacities, we observed situations to be overcome. The Europe 2020 aims to better life condition, innovation and research and health. Part of all these is the public policy that we should address to. In this paper, the analysis of Romanian industry has a territorial approach: Romania has 42 territorial administrative units. Each of them has own agriculture activities and food industry results. On each of them, farms and local actors in the field had benefit of European funds in order to improve their activity.*

**Keywords:** agriculture, food industry, territorial correlations

## 1. INTRODUCTION

We are now at an important moment: Europe 2020 acts for both smart and sustainable growth. Given the fact that less than one third of Europeans have university degree, comparing 40% of the Americans and 50% of Japanese ([http://ec.europa.eu/europe2020/priorities/smart-growth/index\\_ro.htm](http://ec.europa.eu/europe2020/priorities/smart-growth/index_ro.htm), accessed on 12<sup>th</sup> of March 2012, hour 14.57), it is naturally to ask ourselves which are the true goals of the old continent. European Commission states very clear: education, innovation, and health are the most important aims. The research must have an innate evolution: from fundamental to applicative. Actually, the success plays this ace: the knowledge transfer from academics towards business.

Yes, it is true that specialists and analysts have daily discussions and discourses on economic crisis. The scientific journals, magazines and newspapers write regularly about the subject of day. The unprecedented economic decrease of Greece is presented through a press release of Hellenic Statistical Authority: the last quarter GDP of 2011 is 7,5% less than the same of 2010 ([http://www.statistics.gr/portal/page/portal/ESYE/BUCKET/A0704/PressReleases/A0704\\_SEL84\\_DT\\_QQ\\_04\\_2011\\_01\\_P\\_EN.pdf](http://www.statistics.gr/portal/page/portal/ESYE/BUCKET/A0704/PressReleases/A0704_SEL84_DT_QQ_04_2011_01_P_EN.pdf), accessed on 10<sup>th</sup> of March 2012, hour 12.30). On the other hand, the Statistics Portugal announced the decline of GDP with 1,6% in 2011 against 2010 ([http://www.inec.pt/xportal/xmain?xpid=INE&xpgid=ine\\_destaquados&DESTAQUESdest\\_boui=130160916&DESTAQUESmodo=2](http://www.inec.pt/xportal/xmain?xpid=INE&xpgid=ine_destaquados&DESTAQUESdest_boui=130160916&DESTAQUESmodo=2), accessed on 10<sup>th</sup> of March 2012, hour 13.00).

However, Europe 2020 has great goals: increasing the jobs' number and quality, new technologies development, enterprises development, smart transport and energy infrastructure etc ([http://ec.europa.eu/europe2020/reaching-the-goals/eu-tools-for-growth-and-jobs/index\\_ro.htm](http://ec.europa.eu/europe2020/reaching-the-goals/eu-tools-for-growth-and-jobs/index_ro.htm), accessed on 1<sup>st</sup> of March 2012, hour 10.15) and all these must be reached in the condition of limits and restrictions.

## 2. LITERATURE REVIEW

When health is one of the priorities of European Commission for Europe 2020, we need to take into consideration food and quality of life. Therefore, each nation should analyse the agriculture and food industry sector, in order to better correlate the national public policy in the field.

The food industry has a strong and clear evolution. Production and consume cannot be trust just from a efficiency, scale economies, nutrition, price politics, availability of products rationally points of view, but must be seen as a matter of emotions, ethics and aesthetics (Frank Bunte, Hans Dagevos, 2009, pg. 20).



The agro-food system is complex. The food industry has a qualitative and quantitative dependence of agriculture. In the same time, multinational control and dispute this system. But less than 3% of total sales belong to them (Frank Bunte, Hans Dagevos, Wageningen Academics Publishers, 2009, pag. 18).

Economists and engineers, PR specialists state about Romanian food industry that may be an important national project. By the integration of the national agriculture production to food industry, the last will have market success. Why is that? Because Romanian agriculture's potential is obvious. Plus, there is available labour. It must be qualified and prequalified for food industry needs, but it exists.

Before 1990, during communist period, food enterprises had a territorial disposal, function their dependence of agriculture centres and the processing degree of the final product Voicu, R., Rădulescu, C.V, 2003, pp. 20). Therefore, there were two types of food enterprises:

- First level processing enterprises which were situated in rural area, very closed to farms;
- Second and third level enterprises, which were situated closed to urban centres, with huge consume.

But, in order to determine a location of an enterprise, it was very important to create a set of criteria able to catch all the limits and all the benefits of the future business (Ignat, R., 2011, pp. 2).

During last twenty years, Romanian food industry confronted many problems. To those belonging to national economy, added some specific issues regarding offer and demand, the decreasing results of agriculture, which food industry depends so strong.

Meanwhile, another problem appeared: international research and innovation determined a more and more chemical approach of it, given the nutrients and additives.

### **3. RESEARCH METHODOLOGY**

The results of the Romanian food industry are analysed further in order to obtain, at the end of several studies in the field, a methodology of creating an urban centre that will integrate high quality of agriculture product to high quality of food industry.

The present research is another step within a broader paper aiming at creating a conceptual model of a centre which will be able to integrate the agriculture production to food industry.

In this paper, the analysis has a territorial approach: Romania has 42 territorial administrative units. Each of them has its own agriculture and food industry results. On each of them, farms and local actors in the field had benefit of European funds in order to improve their activity. The research question regards the correlation between agriculture output on a territorial unit or county and the food industry capacity of integration of this output.

Therefore, a comprehensive analysis of each county of these 42 was run taking into consideration the traditional agricultural products and the agriculture production, and the food industry's sectors that are located on these. For the present paper, we only analysed the animal sector. We drew maps of these counties in order to have a better view of the possibilities of territorial distribution, and we concluded about the possibilities of placing the presented centre.

### **4. DATA ANALYSIS AND INTERPRETATION**

Husbandry has a strategic importance for Romania. Husbandry has tradition on these territories and aims to create a direct and immediate connection to food industry, so that will reach sustainable economic performance.

National authorities understood this potential and are trying to take advantage of it. The support scheme are diverse and relatively easy to be accessed by them. In the same time, in the whole of the structural funds for Romania for 2007-2013 period, the Rural Development National Programme has the higher absorption rate.

The milk production has a specific approach at national level. The milk represents a strategic product, as it has impact upon children, old persons and those with different diseases. As a result, Romanian Ministry of Agriculture and Rural Development established several objectives for this strategic sector policy:

- providing the necessary milk and dairy at European standards;
- organizing the farms efficiency and competitiveness by moving production from own consumption to commercial production;
- organizing farmers into associations for representing their interests of inputs to suppliers and recipients of the products;
- increasing production of raw milk in the national potential to cover production quotas that were negotiated with the European Union since integration.

The milk production at 31<sup>st</sup> of January 2012 is the following:

**TABLE 1**  
**THE MILK PRODUCTION AND PROCESSED MILK CAPACITY AT 31<sup>ST</sup> OF JANUARY 2012**

County	Milk production Thousands hl	Milk production hl/24h	Food industry Production capacity for milk	
			County	Capacity hl/24h
<b>TOTAL for 42 counties</b>	<b>3.070</b>			
<b>Average production per county</b>	<b>73,09</b>			
Suceava	225	7258	<b>Botoșani</b>	5144
Maramures	182	5870	<b>Satu Mare</b>	3200
Mures	145	4677	<b>București</b>	3000
Bistrita Nasaud	129	4161	<b>Ilfov</b>	2620
Bihor	122	3935	<b>Mureș</b>	2574
<b>Total for five counties</b>	<b>803</b>			
<b>% of total</b>	<b>26,15</b>			

*Source: Data processed from Technical-Operational Report of husbandry at 31<sup>st</sup> of January 2012 (RAPORT TEHNIC - OPERATIV asupra situației din zootehnie la data de 31 ianuarie 2012)*

In order to run the analysis we rank all 42 counties by the average milk production and we put into table only the first five of them. Analysing the milk production at 31<sup>st</sup> of January 2012 we observe that the average production for all 42 counties was 73,09 hl, while the production for the first five counties was even three times bigger, eg. Suceava county. In the same time, these five counties obtain together 26,16% of the total national milk production in a month. It is true, that this situation may change by season, given the lactation plan.

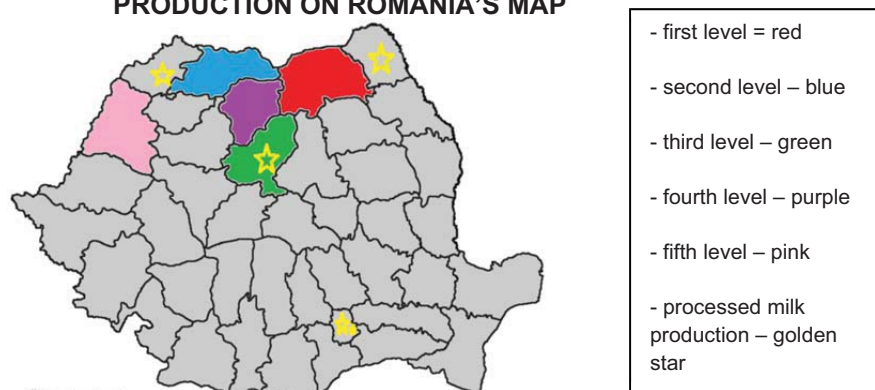
The capacity of production of processed milk is lower than the milk production. The situation is given by the fact that the food industry processed standardised milk and these figures observe only the milk and not the all other milk products. The most relevant part for my research is that there is no correlation between the milk production capacity per county and enterprises that have the highest production capacity. And the map on Figure 1 demonstrates this situation.

Swine sector is another one very sensitive. Therefore, the Ministry of Agriculture and Rural Development ([www.madr.ro](http://www.madr.ro), accessed on 10<sup>th</sup> of March) established several aims to be reached by public policy:

- - promoting the improvement of swine in order to obtain a higher quality of pig carcass

- organizing farmers into associations for representing their interests of inputs to suppliers and recipients of the products
- ensuring income by making goods for export.

**FIGURE 1**  
**THE SUPERPOZITION OF MILK PRODUCTION AND THE CAPACITY OF PROCCEED MILK PRODUCTION ON ROMANIA'S MAP**

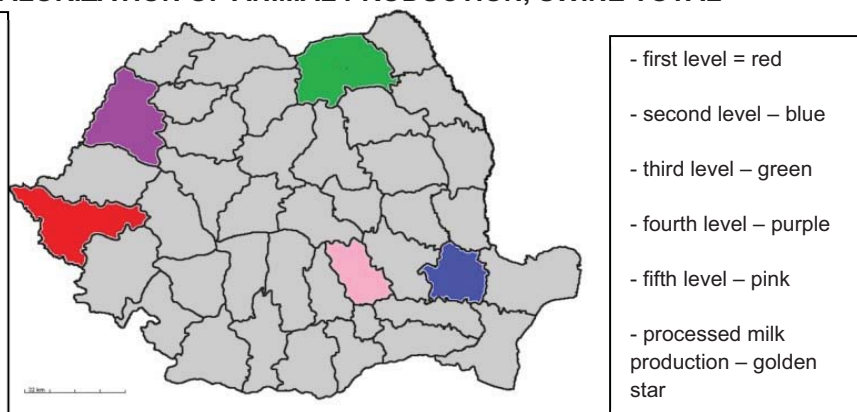


Source: Own concept of Romania's milk production's map

The situation of the pig production at national level is quite similar to the milk production. 47% of the total swine production is given by the five counties hat have the highest production. This means that the rest of 37 administrative units produce only 53% of the national production. The dependence of the national production for these five counties is very strong and it is important to verify, for further research, the correlation between productions and consume production and export infrastructure etc.

**TABLE 2**  
**OBTAINING AND VALORIZATION OF ANIMAL PRODUCTION, SWINE TOTAL**

<b>TOTAL (number of pigs)</b>	<b>311.474</b>
<b>Average production per county</b>	<b>7.416</b>
<b>Timiș</b>	<b>73.470</b>
<b>Brăila</b>	<b>26.120</b>
<b>Suceava</b>	<b>17.160</b>
<b>Bihor</b>	<b>16.701</b>
<b>Prahova</b>	<b>13.224</b>
<b>Total of first five</b>	<b>146.675</b>
<b>% of total</b>	<b>47</b>



Source: Own concept of Romania's swine production's map with data processed from Technical-Operational Report of husbandry at 31<sup>st</sup> of January 2012 (RAPORT TEHNIC - OPERATIV asupra situației din zootehnie la data de 31 ianuarie 2012)

The average production per county is around 7416 pigs, while the first county, Timis, numbers 73470 pigs, almost 10<sup>th</sup> times higher. In fact, Timis county counts 23,9% of the total number of pigs at national level. The number is twice as bigger than the second county. Timis has a long tradition in swine production and this is the explanation for the situation. Timis does not have the highest capacity of processing pork, but Suceava county has. This lack of correlation need to be overcome and resolved as it generates increased production and transportation costs.

## 5. CONCLUSIONS

The potential of Romanian agriculture is huge. This sector confronts many problems and needs market for its products. The food industry is at the moment of relaunching for obtaining performance.

Investments from European funds were made in the production capacities and in quality of products. But there is no correlation between agriculture's output and food industry capacity of absorption, from a territorial perspective. Also, there is no correlation between food industry production capacity and consumers. Most probably, this is the main weakness of the sector.

In order to become more performant, it is necessary to better look for both the agriculture situation, and to better understand its needs in order to adopt and implement a better public policy. The reason is that applicative research is being done and should find the best territorial solution. All these may become recommendations for further public policy.

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# THE VARIABILITY IN ADVERTISING EXPENDITURES AND SALES

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## ABSTRACT

*In a previous study, we found evidence that aggregate advertising affects aggregate consumption positively. Because corporations tend to allocate a fixed proportion of their revenue for advertising, this results in a low variance for aggregate advertising over time. The variance does, however, change over time, so we can explore how the variance of advertising affects consumption. We also explore how advertising variance affects final sales. If variability in advertising expenditures affects these measures negatively, then the low variance of advertising also causes them to be higher than they otherwise would be. If, on the other hand, the relationships are positive, then the low variance of advertising actually dampens consumption and final sales. We examine these possibilities using a generalized autoregressive conditional heteroskedasticity (GARCH) model and annual data from 1947 through 2005. The results indicate that variability of advertising expenditures affects both consumption and final sales negatively.*

## 1. INTRODUCTION

It has often been noted that, while advertising-to-sales ratios differ across industries, firms within particular industries allocate a fairly fixed percentage of total revenue to advertising over time. Nerlove and Arrow (1962), for instance, cite this behavior and give an often-cited explanation of why this “rule of thumb” may actually be optimal behavior on the part of firms; and Grabowski (1978) offers evidence that firms set their advertising-to-sales ratios at levels that we would expect from profit-maximizing firms. Firms advertise in order to increase sales of their good or service, perhaps at the expense of their rivals’ sales. Of course, if the increases in the sales of a firm’s good or service induce by advertising is due to matching decreases in their rivals’ sales, total revenue for the entire industry need not increase with advertising; advertising may be a zero-sum game.

At the macroeconomic level, however, if sales increase with increases in aggregate advertising, the sales is associated with decreased savings. This issue has been addressed by Chowdhury (1994) for the United Kingdom and Jung and Seldon (1995) for the United States. Jung and Seldon found advertising to increase personal consumption in the U.S. (and vice versa).

A different question, which is a natural extension of Jung and Seldon (1995), is considered in this paper. If all firms adhere to a rule of thumb of maintaining a (fairly) constant advertising-to-sales ratio, then there will be a (fairly) constant advertising-to-sales ratio in the economy as a whole and there is. In addition, the variability of advertising will be low; although fluctuations of the ratio can still occur, due to firms’ inexact estimates of their revenues at any point in time. In this paper, we investigate whether this rule of thumb increases sales over what might occur if the firms did not adhere to the rule of thumb. We are able to do so because, while the variance of advertising may be low, it still changes from period to period. Then, if sales are negatively correlated with advertising variance, the generally low variance of advertising results higher revenues than might otherwise be the case; while, if the correlation is positive, the low variance of advertising may actually lower revenues.

In this paper, we will also consider how the variance of advertising affects two measures of sales. One of these measures, following Jung and Seldon (1995), will be personal consumption. The other measure of sales will be the “final sales” component of GDP. While personal consumption, domestic investment, the net exports of goods and services, and government purchases of goods and services. We will refer to personal consumption and final sales as two types of “sales” variables.

We will examine the relationship between advertising variability and sales using a generalized



autoregressive conditional heteroskedasticity (Generalized ARCH, or, hereafter, GARCH) model. The original autoregressive conditional heteroskedasticity (ARCH) model was developed by Engle (1982). Bollerslev (1986) extends the ARCH model to a GARCH model. The GARCH model differs from the ARCH model in that the former conditions current variance on lagged variance, as will be shown in the specification of our model.

From the GARCH model, we can estimate the conditional variance of advertising for particular time periods. Using the estimates of the conditional variance, we can then explore how the variance affects sales in the macroeconomy by regressing the two measures of sales on the variance of advertising.

## 2. THE ECONOMETRIC MODEL

Before specifying the GARCH model, we needed to determine the ARIMA structure so we would know how many lagged endogenous variables, how many differenced endogenous variables, and how many lagged error terms to include. We ran an ARIMA model using Box-Jenkins (1976) time series analysis. We found the structure to be ARIMA (1, 0, 3). The error terms were tested and found to be white noise, which supports the ARIMA (1, 0, 3) model. This means that, for our advertising equation, we should include the lagged term  $ADV_{t-1}$ , we should include no differenced  $ADV$  terms, and we should include the three lagged error terms  $\varepsilon_{t-1}$ ,  $\varepsilon_{t-2}$ , and  $\varepsilon_{t-3}$ . Therefore, we specify the GARCH model of advertising as:

$$ADV_t = \alpha_0 + \alpha_1 ADV_{t-1} + \varepsilon_t + \Phi_1 \varepsilon_{t-1} + \Phi_2 \varepsilon_{t-2} + \Phi_3 \varepsilon_{t-3}, \quad (1)$$

$$\varepsilon_t^{1/2} | I_{t-1} \sim N(0, h_t), \quad (2)$$

$$h_t = \gamma_0 + \gamma_1 \varepsilon_{t-1}^2 + \delta_1 h_{t-1}, \quad (3)$$

where  $ADV_t$  is aggregated advertising expenditures at time  $t$ ,  $I_{t-1}$  is the set of all available information at time  $t-1$ , and  $h_t$  is the variance of the error term  $\varepsilon_t$ . the inclusion of the lagged conditional variance  $h_{t-1}$  in equation (3) differentiates the specification of the GARCH model from that of the ARCH model; this is because the latter omits lagged variance so, with ARCH,

$h_t = \gamma_0 + \gamma_1 \varepsilon_{t-1}^2$ . the GARCH specification, therefore, generalizes the ARCH model, and allows the variance of advertising expenditures to exhibit a more general time dependence. This, in turn, will allow us to exploit patterns and persistence in the behavior of this variability.

Once we have estimated the GARCH model, we will be able to investigate whether the variance of advertising affects the levels of sales. We will do this by regressing the alternative measures of sales on the estimate of  $h_t$  generated by the GARCH model, so that

$$SALES_t = \beta_0 + \beta_1 h_t + \eta_t, \quad (4)$$

where  $\eta_t$  is an error term for the SALES equation. Equation (4) is estimated using OLS.

## 3. THE DATA AND ECONOMETRIC RESULTS

We will use time series data for advertising expenditures and the two different measures of sales: the personal consumption component of Gross Domestic Product (GDP) and the final sales component of GDP. Advertising expenditures were obtained from McCann-Erickson, Inc., of New York City, the institution that supplies advertising data for annual issues of the Statistical Abstract of the United States. Advertising expenditures are in tens of millions of dollars. Consumption and final sales data are from the Citibank Database. These are in billions of dollars. All three series are deflated by the GDP deflator from the Citibank Database.

Results for equations (1) and (3) are presented in Table 1. For equation (1), we find the lagged advertising term to be statistically significant at the 1 percent level. While the lagged error terms are significant, our time series analysis suggests that they belong in the equation, so we retain them. For equation (3), we find the constant and the lagged variance,  $h_{t-1}$ , to be statistically significant at the 1 percent level. While the lagged squared error term is statistically insignificant, it must be retained

because the structure of equation (3) is dictated by statistical theory; the derivation of the conditional variance  $h_t$  shows that both the lagged squared-error term as well as the lagged conditional variance belong in the equation.

Having estimated equation (3), we can now use the estimates of the variance for each of the years of our sample to estimate two versions of equation (4); one where SALES is taken to be the consumption component of GDP (CONSUMPTION) and one where SALES is taken to be the final sales component of GDP (FINAL SALES). We estimate the two equations where the two SALES variables are functions of a constant and the contemporaneous variance using OLS. The results for the OLS equations are presented in Table 2. For the equation with CONSUMPTION, the constant term is significant at the 1 percent level, while the variance term is significant at the 5 percent level. For the equation with FINAL SALES, both terms are significant at the 1 percent level. In both cases, the coefficient associated with the variance term is negative.

#### 4. CONCLUSION

In this paper, we investigate whether the generally low variance of advertising expenditures in the macroeconomy increases sales over what might occur if the firms did not adhere to the rule of thumb. We do this by taking advantage of the fact that, while the advertising variance is low, it still changes from period to period. This allows us to regress two variables that measure sales on the advertising variance estimated by a GARCH model.

We find that sales are negatively correlated with advertising variance. This means that the generally low variance of advertising maintains sales at a higher level than we might otherwise observe. While Jung and Seldon (1995) have found that personal consumption increases with advertising, we have found in this study that personal consumption (as well as final sales) is further increased by the low variance of advertising.

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**Table 1:** Results of the GARCH Estimation for  $ADV_t$  and  $h_t$  (t statistics in parentheses)

$ADV_t$		$h_t$	
Variable	Estimate	Variable	Estimate
Constant	-4.054 (-0.287)	Constant	498.430*** (3.215)
$ADV_{t-1}$	1.126*** (3.921)	$\varepsilon_{t-1}^2$	0.038 (0.713)
$\varepsilon_t$	1.000 <sup>t</sup>	$h_{t-1}$	0.322*** (3.012)
$\varepsilon_{t-1}$	0.947 (0.586)		
$\varepsilon_{t-2}$	-0.248 (-0.081)		
$\varepsilon_{t-3}$	-0.170 (-0.104)		
Degrees of Freedom	54		39

\* Significant at the 10 percent level in a one-tailed test

\*\* Significant at the 5 percent level in a one-tailed test

\*\*\* Significant at the 1 percent level in a one-tailed test

<sup>t</sup> In the GARCH model, as in OLS, the coefficient associated with the contemporaneous error term is constrained to 1.

**Table 2:** OLS Estimation of  $SALES_t$  as a Function of  $h_t$  (t statistics in parentheses)

$SALES_t = CONSUMPTION_t$		$SALES_t = FINAL\ SALES_t$	
Variable	Estimate	Variable	Estimate
Constant	5984.0*** (16.89)	Constant	9594.6*** (18.72)
$h_{t-1}$	-0.022** (-1.982)	$h_{t-1}$	-0.004*** (-2.186)
Degrees of Freedom	57		57

\* Significant at the 10 percent level in a one-tailed test

\*\* Significant at the 5 percent level in a one-tailed test

\*\*\* Significant at the 1 percent level in a one-tailed test

# TRUST, PERCEIVED EASE OF USE, AND PERCEIVED USEFULNESS TOWARD ATTITUDE OF STUDENTS IN LEARNING WEB-BASED ERP SIMULATOR

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## ABSTRACT

Enterprise Resource Planning (ERP) refers to software or business concepts that link operations and intra-company processes. Even though the enterprise software market will continue to grow through 2015, many universities have struggled in integrating ERP software and concepts into their curriculums. Then, the web-based ERP simulation is an initiative that allows students to have experience in simulated, complex, real-world business environment. This research attempts to investigate individual variables affecting attitude towards usage of a web-based ERP-simulated learning medium in a Thai university. The researchers found positive relationships between trust and attitude towards usage as well as that of perceived ease of use and attitude towards usage. However, the researcher did not find positive relationship between perceived usefulness and attitude towards usage.

**Keywords:** *Trust, Perceived Ease of Use, Perceived Usefulness, Attitude, Simulation, ERP and Education, Educational Technology*

## 1. INTRODUCTION

AMR Research reported that the Enterprise Resource Planning (ERP) market had increased from 28.8 billion U.S. dollars in 2006 to 47.7 billion U.S. dollars in 2011 (Jacobson, Shepherd, D'Aquila, & Carter, 2007). Gartner (Eid, 2011) forecasted that companies will spend 106 billion U.S. dollars on application software during 2011. Many segments of the enterprise software market will continue to grow, but there will be fewer new purchases through 2015. Enterprises will begin to migrate to open source, service-oriented architecture (SOA), software as a service (SaaS), and cloud-based applications (Eid, 2011; Goel, Kiran, & Garg, 2011). Graduates who can align business goals with technology strategy supporting present and future demand are needed in the era of enterprise integration systems. Universities would have to offer their business and IT related curriculum to serve these needs in order to remain competitive in educational offerings. Therefore, obtaining knowledge in ERP is necessary for graduates of today business schools. When many universities have struggled in integrating ERP software and concepts into their curriculums, ERP skill shortage remains high (Hawking et al., 2007). ERP professional instructors with the substantial skills have been hard to obtain and retain (Liang, Saraf, Hu, & Xue, 2007; Bologna, et al., 2009). Lastly, teaching ERP in higher education has not been standardized yet. There are insufficient of business scenarios and detailed use cases (Gab & Maedche, 2010). Ayyagari suggests that many universities can use OpenERP as hands-on ERP learning environment and a freely available open source solution without the need for significant resource commitment (Ayyagari, 2011). Several large software vendors such as SAP, Microsoft, and Oracle provide university alliance programs that are likely to require substantial amount of commitment from universities in terms of faculty allocation and monetarily (Ayyagari, 2011). Nevertheless, the 21st century information systems programs should focus on ERP concepts instead of configuring ERP software (Andriole & Robert, 2008). Then, the web-based ERP simulation is one such initiative that allows students to have learning experience in simulated, yet complex business environment (Seethamraju, 2011). Development in pedagogical approaches emphasize on active learning or learning-by-doing. Teaching approaches rely only on lectures are likely to produce passive learners (Ayyagari, 2011; Bok, 1986). Simulation environment is one of the most powerful tools in learning because it provides a real-world business environment and their engaging active learning experience (Seethamraju, 2011). The rapid growth of mobile devices and broadband networks as well as threats of natural disasters in today world support the use of computer-mediated learning, which is likely to superior to traditional instructional modes (Alavi, 1994; Ayyagari, 2011). E-learning tools and technologies have been implemented to support conventional courses in higher education institutions introducing "hybrid" e-learning module that aims to enhance the learning experiences of students (Ahmed, 2010). Nevertheless, the understanding student motivations and beliefs with ERP systems should shed light to effective ERP education. Success in web-based ERP environment is tied to individual factors. Teachers are hesitated to invest their time and effort if they are not confident

that students will find the learning tool acceptable. Therefore, this study extends trust theory with Technology Acceptance Model (TAM) by investigating relationships of trust, perceived ease of use, and *perceived usefulness* toward *attitude* in using the web-based ERP-simulated technology.

## 2. LITERATURE REVIEW

Trust is a positive belief about the perceived reliability of, dependability of, and confidence in a person, object, or process (Everard & Galletta, 2006; Fogg & Tseng, 1999; Gefen et al., 2003). Trust in technology depends on the general reliability of the technology and its correct functioning (Hernandez-Ortega, 2011). It is especially important for the decision to employ a technology that is not widely used as it reduces the risk and uncertainty perceived in the early stages of its adoption (Hernandez-Ortega, 2011; Pavlou & Gefen, 2004). For this study, trust belief is the perception that the trustworthiness of the simulation provider consisting of a set of specific beliefs about integrity, benevolence, and competence of the web-based ERP-simulation (Luo, Li, Zhang, & Shim, 2010).

The Technology Acceptance Model (TAM), a widely applied Information Systems (IS)' theory, revealed that an individual's behavioral intention to use a system is explained by *perceived ease of use* and *perceived usefulness* (Davis, 1989). Davis described *perceived usefulness* as "the degree to which a person believes that using a particular system would enhance his/her job performance" and *perceived ease of use* as "the degree to which a person believes that using a particular system would be free of physical and mental effort" (Davis, 1989). Then, the system use is directly determined by behavioral intention to use, which is in turn influenced by user's *attitude* toward using the system (Wu & Chen, 2005). *Attitude* towards usage defines at "a person's affective evaluation of the costs and benefits of using a new technology" (Davis et al., 1989).

Numerous researchers has applied TAM to ERP education (Scott & Walczak, 2009; Choi et al., 2007). Referring to *perceived usefulness*, the web-based ERP-simulated learning environment offers student substantial benefits. Students can obtain lecture materials anytime, anywhere, in or out of the classroom by downloading them from the simulation's web site. They can access a wide variety of resources and receive immediate feedback to correct misunderstood materials (Wilson & Lindoo, 2011). Based on *perceived ease of use*, the simulator is extremely easy to use through a Java-based program running in a browser. Students can click "start" button to begin the exercise with simple simulated ERP screens for inputting and retrieving data. "The simulator instructs the student on what to do, and even prompts with a read highlight on what fields or instruction set they need to click to work their way through the process flow" (Lindoo & Wilson, 2010). Students' *attitude towards usage* refers to a student's affective evaluation of the costs and the benefits of using the web-based ERP-simulated environment.

Several previous studies found *trust* as having a direct influence on *attitude* and *perceived ease of use* and *perceived usefulness* are determinants of *attitude* (Egea & Gonzalez, 2011; Hung, Chang, & Yu, 2006; Wu & Chen, 2005). Hence, the researcher hypothesizes the following: *trust* is positively related to student's *attitude towards usage* of the web-based ERP technology (H1), *perceived ease of use* is positively related to student's *attitude towards usage* of the web-based ERP technology (H2), and *perceived usefulness* is positively related to student's *attitude towards usage* of the web-based ERP technology (H3).

## 3. METHODOLOGY AND RESULTS

The target population was undergraduate students enrolling in a business computer course and an introduction to IS course conducted with the use of the web-based ERP simulator created by Simha R. Magal and Jeffrey Word in partnership with SAP (Magal & Word, 2009) housing by the WileyPlus Website, a university's learning management system, and a university's messaging portal system. An instructor at a university in Thailand administered the course materials through the site. A survey questionnaire assessing the constructs in the current study was developed from published scales of previous research as stated in the literature review. All of the scales were measured on a 5-point Likert scale, ranging from 1 = strongly disagree to 5 = strongly agree. The survey was collected from 2009-2010. A total of 160 self-administrated questionnaires were distributed to all students in the two classes



and 148 usable surveys were returned giving an overall response rate of 92.5%. The response rate was high, mainly due to the fact that the questionnaires were collected right after the respondents completed the forms on the last week of the classes. The sample was females (36.2%) more than male (28.4%); the typical respondent was 21 years old; have “moderately low” grade point average. In this study, the psychometric properties of the instrument were utilized for checking reliability and construct validity. The alpha coefficients of the reliability analysis ranged from .53 to .85 indicating that all of the scales were acceptable (Nunnally, 1978). Construct validity was assessed by principal component analysis. The analysis produced four components. All results and multiple regression analysis are reported in the table below.

<b>Dependent Variable:</b> <i>Attitude towards Usage</i> (Mean = 3.05, S.D. = .62, C. A. = .53), $r = .45$ , $R^2 = .20$									
<u>Independent variables</u>	<u>Hypotheses</u>	<u>Mean</u>	<u>S.D.</u>	<u>Cronbach's Alpha (C.A.)</u>	$\beta$	$t$	<u>Sig.</u>	<u>Support</u>	<u>VIF</u>
<i>Trust</i>	<i>H1</i>	3.84	.72	.85	.139	2.05	.042**	Yes	1.103
<i>Ease of use</i>	<i>H2</i>	3.09	.75	.72	.325	5.20	.000**	Yes	1.010
<i>Usefulness</i>	<i>H3</i>	3.80	.60	.71	.098	1.20	.233	No	1.104

$P < 0.05$ ,  $N = 148$

*Perceived ease of use* and *trust* were found to be significant determinants of user's *attitude towards usage* of the web-based ERP-simulated systems, explaining 20% of the total variance. The relative strength of their explanatory power; however, was different. *Ease of use* ( $\beta = 0.325$ ) and *attitude* ( $\beta = 0.139$ ) were significant predictors of user's attitude towards usage with the systems. One group of researchers have indicated that the multicollinearity problem becomes too serious when a VIF value is equal to or higher than four (Miles & Shevlin, 2001). For this study, VIF values are acceptable for all items studied. Overall, the results indicated a statistically significant linear relationship between the constructs with a p-value less than 0.05. There were positive associations between the students' *attitude towards usage* and the two factors: *trust* and *perceived ease of use*. Hence, H1 and H2 were supported. The regression analysis for identifying the relationship between independent and dependent variables were illustrated in figure below.

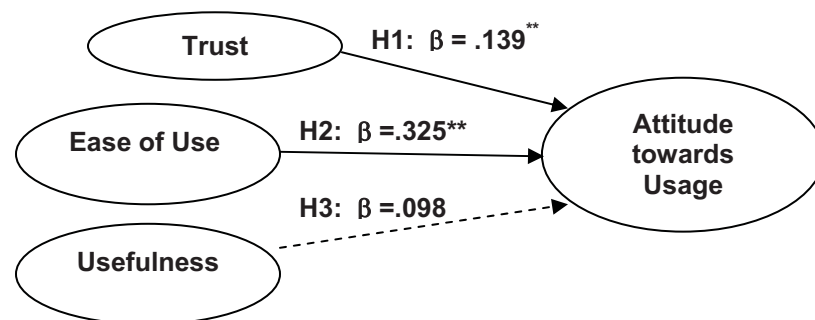


Figure: Conceptual Model of Student Attitude towards Usage in Web-based ERP-simulated Class

Note: Significant paths ( $p < .05$ ) between constructs were reported with standardized beta weights.

#### 4. CONCLUSIONS AND DISCUSSION

Although ERP market value is continued to double in less than four years, ERP skill shortage remains high (Hawking et al., 2007). More companies will explore different alternatives such as the use of open source, SOA, SaaS, and cloud-based applications in implementing ERP (Eid, 2011). University graduates who can align business goals with technology advancement should be able to visualize their present and future demand in the age of enterprise-wide systems. To remain in competitive educational offerings, many universities would have to lay the ground on ERP skills. Despite various difficulties in teaching ERP software, the web-based ERP simulation offered by Magal and Word (2009) has become one of initiative that lead students to have learning experiences in simulated, yet complex business

environment. Simulation provides a real-world business environment to support conventional course in higher education institutions. However, understanding student motivations and beliefs with ERP systems should produce effective and efficient ERP education. The trust and TAM models are combined and extended in this study. The researcher found that only *trust* and *perceived ease of use* significantly positively related to *attitude towards usage* of students in the web-based ERP-simulated courses. This result is also similar to researches by Egea and Gonzalez (2011) that *ease of use* is more significantly than *trust* in positively relating to *attitude toward usage*. However, the result of this study is different from previous researches that *usefulness* is not significantly positively related to *attitude toward usage* of the web-based ERP-simulated software (Hung, et al., 2006; Wu & Chen, 2005). Students would evaluate costs and benefits of using the systems if they found that the software was easy to use and could be trusted for the general reliability of the technology and its correct functioning especially if the a technology that was not widely used (Hernandez-Ortega, 2011; Pavlou & Gefen, 2004). However, the students might not realize benefits of the systems that they could download lecture materials anytime, anywhere, in or out of the classrooms. The teachers should be certain that their students know all resources such as receiving immediate feedback to correct misunderstood materials (Wilson & Lindoo, 2011), so that the students will have attitude in using the systems. Instructors of the web-based ERP-simulated courses should be certain to explain to their students the usefulness of the system such as downloading lecture materials anytime, anywhere, in or out of the classrooms. Universities executives, instructors, software vendors should offer easy-to-use and trusted simulation for the students. Nevertheless, there are several limitations to this research. First regardless of the significance of the relationships between factors in the regression model, the researchers cannot ignore that fact that these relationships may not apply to some universities. The web-based ERP-simulated software may be limited to universities in rural areas. First, the access codes and the textbook of the simulation needed to be ordered and shipped from the US or Singapore, so the simulation materials might not be arrived on time for the universities in rural areas to implement it. Second, the use of the simulator requires high speed Internet and flash program. So, universities with limited Internet accesses and apple hardware like iPhone or iPad may not be able to it. It should be noted that the model variables explained 20% of the variance on *attitude towards usage* with the simulation. When the large percentage on *attitude towards usage* remain unexplained, there should be the need for additional research incorporating potential unmeasured variables in this study. A slightly small cronbach's alpha of *attitude towards usage* (0.53) may indicate some problem with reliability testing, then refining of the construct is recommended. Due to the small number of the sample size of 148, there might be some problem with construct validity.

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# PERCEIVED EASE OF USE, PERCEIVED USEFULNESS, AND SELF-EFFICACY TOWARD COURSE QUALITY OF HYBRID INSTRUCTION MODEL

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## ABSTRACT

*Hybrid learning model (HIM) has become even more interesting learning delivery method in recent year especially after the Thai mega-flood damaging many universities in the central region of the country last 2011. A university in Thailand has sought to develop its own hybrid learning courses including learning management system (LMS) as well as other multimedia components. HIM replaces some portion of traditional face-to-face meeting times with online instruction. This paper provides some practical guidance for establishing blended learning courses. The results demonstrated that perceived usefulness was the only significant predictor of HIM course quality.*

**Keywords:** *Perceived Ease of Use, Perceived Usefulness, Computer Self-Efficacy, Hybrid Instruction Model, Course Quality*

## 1. INTRODUCTION

Learning Management System (LMS) has been utilized to supplement face-to-face instruction in Thailand for a long time (Sukpaiboon, Boonchai-Apisit, & Praneetpolgrang, 2002). Two universities in Thailand collaborated to build a prototype system which could support instructors and improve student learning capability (Sukpaiboon, et al., 2002). Nevertheless, Thai students are known to be obedient, uncritical, and unwilling to challenge the authority of teachers (Sanprasert, 2009). While Thai students would unlikely to extensively discuss with their remote participants to examine the knowledge transfer and collaboration in distributed teams, "the US students were complaining about the limited and somewhat ineffective communication received from the Thai team members" (Arenas-Gaitan, Ramirez-Correa, & Javier Rondan-Cataluna, 2011). Although LMS has implemented in Thai universities for quite a while, its effectiveness and efficiency are still questionable. Referring to the 2nd Thailand Information and Communication Technology (ICT) Master Plan (2009-2013), e-Education is still one of the key strategies for "development of human resources by increasing the application of ICT in education and training" for life-long learning (MinistryOfICT, 2012). Furthermore, the mega-flood swept across 60 of Thailand's 77 provinces from October to December 2011, damaging more than 10 percent of the nation's rice farms. The finance ministry of Thailand cut its forecast for economic growth to 3.7 percent from 4 percent and said the disaster may cost 120 billion baht (\$3.9 billion) (Yuvejwattana & Suwannakij, 2010). The flooding heavily hit universities "especially those in Pathum Thani, with losses estimated in the hundreds of millions of baht" (Khaopa, 2011). Thammasat University's Rangsit campus had suffered almost 3 billion baht in damage, while Bangkok University's Rangsit campus estimates the flood impact at more than 1 billion (Bangkokpost, 2011). Apart from damaged infrastructure and educational equipment, students had been unavoidably affected as floods had forced their schools to postpone the start of the second semester for 3 months (Khaopa, 2011). They started their studies in January 2012 instead of the middle of October 2011. In order to cope with late timelines of students' educational plans and extremely limited usable infrastructure and educational equipment, a university in Thailand has implemented Hybrid Instruction Model: HIM. HIM or blended learning refers to an idea of combining the good parts of online courses with that of face-to-face courses. It includes face-to-face components such as in-class discussion, group work, lecture along with web components like online contents, assignments, announcement, chat room and other online materials (Omer Delialioglu & Yildirim, 2008). LMS is considered as a part of HIM for this study. Therefore, the purpose of this study is to investigate factors relating to HIM course quality.

## 2. LITERATURE REVIEW

The goal of the ICT for Education Master Plan 2007-2011 has been to create Smart Thais with Information Literacy by integrating ICT into teaching and learning in Thai classrooms as well as using ICT



as a part of the blended learning (Laohajatsang, 2009a). The e-Learning technology has been utilized as supplementary learning approach and it is adequate and ready to serve university personnel and students (Laohajatsang, 2009b; ThailandCyberUniversity, 2012). While Thai students are known to be obedient, uncritical, and unwilling to challenge the authority of teachers (Sanprasert, 2009); as a result, they are unlikely to interact in the LMS environment (Arenas-Gaitan, et al., 2011). Several researchers claimed that statistics provided by the "Reports" from "MOODLE," a license free open-source LMS software platform widely used by many universities, could be used for motivating students and building more robust and interactive content in a courseware (Nagi, Suesawaluk, & U-Lan, 2008). A-tutor is also widely used LMS system in Thailand because there are local communities and modified Thai language in the system (Laohajatsang, 2009b). Although there was evidence that instructors and students being reluctant to use e-Learning, "A-tutor" used at Srinakharinwirot University was found to have the complete LMS components including ease of installation, ease of use, and high reliability (Raksakietisak, 2003). HIM environment aims to integrate features of LMS, "such as efficiency, sufficiency, and freedom to access information anytime with minimal effort," with features of traditional classroom instruction, such as interacting with classmates and the teacher in the classroom (O. Delialioglu & Yildirim, 2007). Intrinsic motivation is a key element for the success in the hybrid course. Students indicated that although they enjoyed some learning activities in the "Computer Networks and Communications" course designed and developed as a hybrid course, they did not enjoy reading the content from the website. Instead, they enjoyed the real-life experiences, "such as installing a cable, configuring a computer or a network device, and making a cabling design for a given building floor plan" (O. Delialioglu & Yildirim, 2007). Tsoi suggested an emerging multimedia learning design pedagogy for hybrid learning model, which could engage the learners (Tsoi, 2007). Many researchers found no differences in academic achievement between traditional, hybrid, or distance learning mode (Keller, Hassell, Webber, & Johnson, 2009; Olapiriyakul & Scher, 2006). Some evidence even showed the high level of student satisfaction with the HIM used in the MBA program, "along with high levels of student performance on the annual standardized ETS MBA Major Field Exams" (B. Davis, 2007). Therefore, the characteristics of HIM course quality include well-designed online interactive discussion and brainstorming, multimedia presentation for the course materials, LMS, along with interacting with classmates and teacher in the classroom (Brophy, 2000; O. Delialioglu & Yildirim, 2007; Sun, Tsai, Finger, Chen, & Yeh, 2008). These qualities would facilitate meaningful educational experiences. Therefore, *the quality of HIM courses* can be a significant factor in investigating HIM. The technology acceptance model (TAM), a widely adopted Information Systems (IS) theory, revealed that an individual's behavioral intention to use a system is explained by perceived *ease of use* and perceived *usefulness* (F. D. Davis, 1989). Davis described perceived *usefulness* as "the degree to which a person believes that using a particular system would enhance his/her job performance" and perceived *ease of use* as "the degree to which a person believes that using a particular system would be free of physical and mental effort" (F. D. Davis, 1989). Then, the system use is directly determined by behavioral intention to use. Many researchers have applied TAM in e-learning studies and discovered that perceived *ease of use* and perceived *usefulness* have significant positive effects on an individual's behavioral intention to use e-learning systems (Bhuasiri, Xaymoungkhoun, Zo, Rho, & Ciganek, 2012; Liu, Liao, & Pratt, 2009; Ong, Lai, & Wang, 2004). Therefore, it can be hypothesized,

H1: *Ease of use* is positively related to HIM course quality.

H2: *Usefulness* is positively related to HIM course quality.

Additionally, the original technology acceptance model was expanded with learner related variables such as perceived *self-efficacy*. "Students with higher learning *self-efficacy* would tend to use more sophisticated self-regulated learning strategies" such as planning, monitoring, or help seeking (Cheng & Tsai, 2011). According to Bandura, "*self-efficacy*" is defined as "one's beliefs and expectations regarding one's ability to perform a task required to achieve specific outcomes" (Bandura, 1997). Students' *self-efficacy* was found to have an indirect positive effect on students' overall course management systems use via students' perceptions (Lust, Juarez Collazo, Elen, & Clarebout, 2012). Researchers revealed that students with higher *self-efficacy* tended to have better information searching strategies (Tsai & Tsai, 2003). Liang and Wu's study illustrated that nurses' *self-efficacy* plays an essential role in their motivation toward e-learning (Liang & Wu, 2010). *Self-efficacy* can influence performance expectations and performance expectations also influence behavior (Wu, Tennyson, & Hsia, 2010). Thus, we hypothesize,

H3: *Self-efficacy* is positively related to HIM course quality.

### 3. METHODOLOGY AND RESULTS

The sample size of 77 had been estimated using G\*Power 3.1.2 software, given effect size of 0.15, alpha of 0.05, beta of 0.20. Therefore, the total sample size of 116 of this study is more than the estimated sample size. The target population was undergraduate students enrolling in finance and business computer courses who had used a tool called BU Learning Management System (BU-LMS) as a part of Hybrid Instruction courses in 2012 in a university in Thailand. BU-LMS includes learning functions and information such as course information, documents, student list, exercises, announcements, student's document, forums, useful links, knowledge center, messaging portal, online assessments, and help. A survey questionnaire assessing the constructs in the current study was developed from published scales of previous research as stated in the literature review. All of the scales were measured on a 5-point Likert scale, ranging from 1 = strongly disagree to 5 = strongly agree. The survey was collected from 15 January to 15 February in 2012. A total of 180 self-administrated questionnaires were distributed to all students in the two classes and 116 usable surveys were returned giving an overall response rate of 64%. The sample was females (55.2%) more than male (44.8%); the majority of the respondents was 20 years old (50.9%); have "moderately low" grade point average (70.7%) of 2 to 2.99 (4 as the highest). Most of them (90.5%) were sophomore year, who read textbook outside classroom for 1-2 times per week (52.6%), worked with their groups for school work 1-3 times per week (88%), and used e-mail, phone calls, or face-to-face meeting for school work for many times per week (76.7%). In this study, the psychometric properties of the instrument were utilized for checking reliability and construct validity. The alpha coefficients of the reliability analysis ranged from .764 to .89 indicating that all of the scales were acceptable (Nunnally, 1978). Construct validity was assessed by principal component analysis. The analysis produced three components. All results and multiple regression analysis are reported in the table below.

<b>Dependent Variable:</b> HIM Course Quality: Mean = 2.86, S.D. = 0.71, C.A. = 0.764 ( $r = .554$ , $R^2 = .307$ )									
<u>Independent variables</u>	<u>Hypotheses</u>	<u>Mean</u>	<u>S.D.</u>	<u>Cronbach's Alpha (C.A.)</u>	$\beta$	$t$	<u>Sig.</u>	<u>Support</u>	<u>VIF</u>
<i>Ease of use</i>	<i>H1</i>	3.67	.60	.846	0.010	0.104	.918	No	1.405
<i>Usefulness</i>	<i>H2</i>	3.40	.62	.877	0.529	5.980	.000**	Yes	1.263
<i>Self-Efficacy</i>	<i>H3</i>	3.74	.71	.890	0.052	0.566	.572	No	1.338

$P < 0.05$ ,  $N = 116$

Only *perceived usefulness* was found to be significant determinant of HIM course quality, explaining 55.4% of the total variance with the beta-coefficient of 0.529. Therefore, perceived usefulness was a significant predictor of HIM course quality. There was not multicollinearity problem when no VIF value was not equal or higher than four (Miles & Shevlin, 2001). Overall, the results indicated a statistically significant linear relationship between the constructs with a p-value less than 0.05. There was a positive association between the *perceived usefulness* and the *HIM course quality*. Hence, H2 was supported. The regression analysis for identifying the relationship between independent and dependent variables were illustrated in figure below.

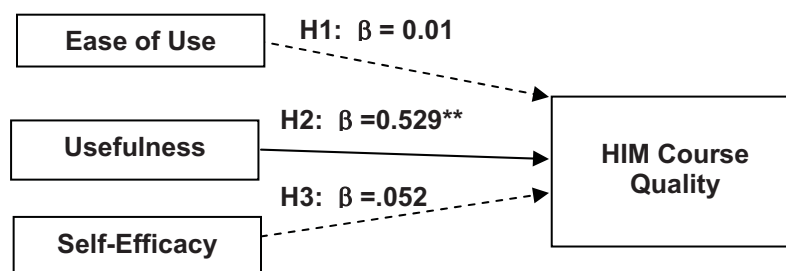


Figure: Conceptual model of student ease of use, usefulness, and self-efficacy towards HIM course quality  
Note: Significant paths ( $p < .05$ ) between constructs were reported with standardized beta weights

#### 4. CONCLUSIONS AND DISCUSSION

This research sought to systematically identify relationships among perceived *usefulness*, *ease of use*, *self-efficacy* toward *HIM course quality*. HIM defines as an concept of integrating the good parts of traditional face-to-face environment such as in-class discussion, group work, lecture with online elements including LMS and other multimedia systems. To begin, Thai students might be reluctant to use HIM due to their conservative characteristics like uncritical or unwilling to challenge the authority of instructors. However, the results from a natural disaster have forced a Thai university to adopt HIM. Based on TAM and HIM course quality' theories, *perceived usefulness*, *ease of use*, and *self-efficacy* should relate to *HIM course quality*. However, the multiple regression statistic method revealed only one positive relationship between *perceived usefulness* and *HIM course quality*. Thus, the students would perceive high HIM course quality if they perceived usefulness of the system. Although our study provides insights into what determines HIM course quality, it has several limitations. The fact that the participants come from one country limits the generalizability of the results. This research sets a timely stage for future research in understanding the determinants of HIM course satisfaction. Finally, additional determinants of HIM course quality as well as HIM course satisfaction should be further investigated.

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## PERSONAL FINANCIAL EDUCATION: INFLUENCE FACTOR IN PROFESSIONAL PERFORMANCE

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### ABSTRACT

*In recent years developed countries have realized the importance of educating its population financially, with some programs and incentive for learning. But this theme in Brazil is recent and is treated precarious. With little federal government initiative, what you see is always Brazilians with a high liability, concerned to settle their debts, and often without knowing the purpose of that debt acquired. What is known is that financial disorder has influence on job performance, which is the main objective of this research, to know better understand the effects of financial education on the individual professional performance. It was performed a multiple varied regression, in which performance has measured by health, debt and income, including one dummy variable gender. The result showed that all variables have influence on job performance, it can be negative or positive.*

**Keywords:** Financial education. Personal Financial. Job performance

### 1. INTRODUCTION

According to Bodie and Merton (1998) finances would be a study on how people place scarce resources over time. And one of the main causes of what reason deep in studies, is to understand the personal finance behavior. Knowing how to deal with the personal resources and administrate them in great manner is ability for few people. The important thing is not save much, but save forever.

The OCDE (Organization for Economic Cooperation and Development), conceptualized the Financial Education as a process where everyone understands better the financial products, among concepts and risks, with clear information can develop an ability and trust to make decision with certainty. Financial Education or Education in Personal Finances is interesting, because it treats about economic decisions of the person, how to manage it, how to earn, spend, save and spend consciously.

For Kotler and Keller (2006) financial decision-making has influence of personal and personal character, as age, genre, occupation, status in the society where the person lives, always takes in consideration the cycle of life of a person as: marriage, children, divorcement and others.

The lack of businesses causes fear and insecurity, mainly, when the decision may affect the property. Who isn't afraid of losing money? Maybe only the big millionaires. And this fear can be solved by a good financial planning, to make consumption dreams come true. One of the major problems of Brazilian debt is due to little or total lack of financial education. Allied to this important topic are: social exclusion, mental health problems, alcoholism, dissolution of families, impaired physical and mental health of children and families in debt.

Ought to be searched, in this paper, enroll the objections made by OCDE and engage to the professional development, to ascertain the implications of debt related to personal financial education in the professional development. It will be employed the method of multiple linear regression to determine the data and achieve the desired result.

### 2. LITERATURE REVIEW

It is understood that Personal Finances is as a Science which studies the application of the financial concepts in the financial decisions of a person or a family. It is considered the financial events of each person in Personal Finances, as well as the phase of life to help in financial planning. Studies of options of financing, household budget, calculating investments, account management, retirement



plans, asset tracking and monitoring expenses are examples of tasks associated with personal finances. (SAITO, 2007)

One of the principles of finances is the main role of the system is to satisfy the preference of consumption of the people, including all the basic needs of life, as food, clothing and shelter. The economic organizations, as the government companies, exist to facilitate the achievement of ultimate function. (BODIE e MERTON, 2000, p. 32).

Having a good education about this subject may not be easy, but the developed countries already have programs that demonstrates its population its importance of educating financially. According to Holzmann and Pallarès-Miralles (2005), the World Bank, "the process of Education in Personal Finances is developing more intensively in the United States, United Kingdom, Australia, New Zealand and South Korea".

## 2.1. Financial Education

One concept of Financial Education was created by OCDE (Organization for Economic Cooperation and Development, 2005) explains that it deals about a process where people develop their comprehension about financial products, their concepts and risks taken, so with information and clear recommendation may be able to develop abilities and necessary trust on taking based and safe decisions, which improve their welfare.

## 2.2. Health

There are many concepts that reflect the health, but the most accepted is the definition of the World Health Organization (WHO) in the preamble of its Constitution describes that health does not only mean the absence of disease, but a connection between the complete state of physical, mental and social welfare.

Lalonde (1974) created a report that suggests that for an optimal health in addition there are four determinants of human biology, the environment, lifestyle and medical part in order to have considered optimal health. What gives you health improved and maintained, it is not enough for the application of health science, but also the efforts and life choices of the person and society. Corroborates this statement the OMS (WHO) reports that there are many factors that combine to compromise the health of man and society. What determines how healthy a person is, is the situation and environment where he /she is, other factors such as education, family and friends with whom relates and genetics are more prevalent than, for example, access to health services.

## 3. METHODOLOGY

The Datas were collected through a survey instrument of 14 questions to a sample of 120 people interviewed at the Catholic University of Brasilia, Distrito Federal, Brazil. According to Likert (1932), Likert Scale is a type of scale of response psychometric used to quantify qualitative variables to obtain a response in five-point Likert scale, according to a statement.

The Statistical Analysis applied will be used where multiple linear regression according to (Freund's and Simon, 2000) which explanatory variables interfere with one dependent variable, in order to predict the value of y, the dependent variable, in accordance with the information obtained from the independent variables thus discovering the participation of individual influence on the variable y. It has variable y the professional performance, as independent variables and debt, income, gender and health problems. Below the model used:

$$y_i = \alpha + \beta_1 X_i + \beta_2 X_i + \beta_3 D_i + \beta_4 X_i + \varepsilon_i,$$

where y is the dependent variable, job performance, which searches to measure the five-point Likert scale, production capacity, optimization of time and interest in improvements in business processes. The independent variables are represented by X1 debt level by the use of credit lines, income X2 and X3 health problems measured by the level of absenteeism and the Likert scale the degree of health. And it was also included a sex Dummy where 1 is for male and 0 is for female, in which the subscript i represents the i-th observation. This model is to explain the relationship between job performance and debt, with a correlation between debt and personal financial education. The results were obtained with the software EVIEWS 7 that according to Shikida (2005, p. 2) "The EVIEWS is an

econometric software [...]. It deals about a program reasonably user-friendly, its commands can be typed directly into the command line. "

#### 4. ANALYSIS OF RESULTS

Table 1 summarizes the information about the variables used in this study. The biggest income was R\$ 22,000.00 (twenty two thousand dollars) in which the respondent holds the position of businessman who has higher education opposed to the smallest which was R\$ 500.00 (five hundred reais) obtained by a current worker who is in university degree. The variable frequency sex was male 55%, which means 66 males and 54 females. The variable health was measured by 1-5 with an average absenteeism of one absence a month due to health problems, with the minimum of no absence to of four or more absences per month.

The variable response rate debt is 3.27, which could be answered 1-5 according to the frequency of use of credit lines, as in financing of credit cards and others, it refers to an average that is used regularly. And the professional performance, also verified of 1 to 5 evidenced and average of 3.87 that indicated the major of people has a compromise to improve their services, optimize the time and yet has a superior knowledge of the processes of the company.

The variables such as job performance, indebtedness and gender as asymmetry results are less than zero with negative asymmetry, tilted to the left. The other health and income variables had greater results than zero with positive asymmetry with tail-bottom turned to the right.

**Table 1: Descriptive statistics**

	Performance	Indebtedness	Health	Gender	Income
Average	3.875000	3.275000	2.066667	0.550000	3933.417
Median	4.000000	3.000000	2.000000	1.000000	2050.000
Maximum	5.000000	5.000000	5.000000	1.000000	22000.00
Minimum	1.000000	1.000000	1.000000	0.000000	500.0000
Deviation Standard	1.057685	1.539194	1.241667	0.499580	4549.001
Asymmetry	-0.690673	-0.231608	0.904863	-0.20100	2.112953
Jarque-Bera	9.790065	11.54502	16.79385	20.00816	178.8166

Table 2 shows the estimation of professional performance. All coefficients had the expected signals. And all of them, with the exception of gender, generated a value above 1.65 for the t statistic which is the value established for a significance level of 10%. Thus, it was found that these coefficients were statistically significant with 90% confidence.

The integrated parameter to the variable debt explains that an addition of debt to a worker increases his performance by 13.1%, implying that workers in debt are more interested in their professional performance. It shows that the debt directly linked to personal financial education has an important influence role by the performance exerted.

Regarding to the gender it is evident that men develop better job than women. As for the parameters involved with the health variable shows those with a higher level of absenteeism, or miss work due to health problems, have hampered their performance, with a decrease of 21%.

The income variable has an influence on job performance, however an increase in income means a minimal increase in performance.

**Table 2: Estimates of job performance****White heteroscedasticity-consistent standard error covariance**

Variable	Coefficient	Standard Error	t-Statistic	Prob.
Debt	0.131694	0.065176	2.020583	0.0456
Gender	0.242981	0.181596	1.338032	0.1835
Health	-0.218390	0.081490	-2.679954	0.0084
Income	5.60E-05	1.60E-05	3.506469	0.0006
C	3.541189	0.313615	11.29150	0.0000
R-squared	0.219271	Average dependent var		3.875000
F-statistic	8.074571	D. P. dependent var		1.057685
Prob(F-statistic)	0.000009			

All these inferences about the parameters are inferred and estimated assuming the other variables are held constant. Regarding the coefficient of determination,  $R^2$ , an indicator that brings the model is fitted to the data collected. It composes 21.92% of the variation in work performance are explained by the variables, debt, gender, health problems and income.

The F test aims to measure the effects of explanatory variables on the dependent variable. The number of 8.07 for this test for significance for F statistic shows enough strength to the model and a p-value approximately equals zero.

These results presented in Table 2 have the results obtained already applied to the heteroscedasticity of White, which shows that there is a strong dispersion.

All the T and F tests are validated with the assumption of normality of residuals. The test of normality Jarque-Bera gives the reliability of the model presented. With Jarque-Bera value of 1.42 and a p-value of 0.48 shows that the residues are normally distributed.

## 5. CONCLUDING REMARKS

It should be noted that the analyzed sample was a small number, because it deals about a study to verify the effectiveness of the proposed model. It should be observed a larger sample to achieve results with greater reliability.

There are studies about the debt mentioned is directly linked to personal financial education, having thus directly influence among the issues discussed, which shows that the more debt the greater the concern about their job performance.

The gender variable obtained a confidence level of approximately 83%, however, should be taken into account the sample, because it was directed study, the model must be tested with different samples and in greater numbers. For these reasons it is important to mention that some results indicate distortion as is the case that the model reflects in relation to men, which has to be more likely to have better job performance than women. Other variables were not tested and may be inferred in the result.

The variable health, absenteeism indicator, was also very relevant to the performance which states that workers who have more absences due to ill health have impaired professional work performance.

Income, another study showed less prominent, because it has received numbers near zero, but considering the model, people with higher incomes are more careful with their professional performance.

As expected, the model brought a positive response to the goal, where people dealing with debt manage harder to perform better, to try to settle these debts acquired.

These variables had a low level of correlation, so there is no multicollinearity, with a maximum ratio of 38%, this lack of multicollinearity is evident in the low  $R^2$ .

The personal financial education becomes increasingly important, developed countries bring effective financial education programs to their population is better educated for financial products. According to Holzmänn and Pallares-Miralles (2005), the World Bank, "Education in the process of Personal Finance is developing more intensively in the United States, United Kingdom, Japan, Australia, New Zealand and South Korea." With the linkage between debt and personal finance, it is shown that personal financial education influences job performance, and well educated does not mean debt, but whether knowing how to debt, and thus can perform better at your job, what makes you a better professional.

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## EMPLOYER BRAND ATTRIBUTES: A COMPARISON OF THE PERSPECTIVES OF PROSPECTIVE EMPLOYEES AND EXPERT OPINION

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### ABSTRACT

*The first branding papers emerged in the 1940s, and research since then has been concerned with the differentiation of products and services in consumer markets. The concept of employer branding has emerged relatively recently in the academic literature. This paper is concerned with advertising agency brand image among prospective employees. Specifically this exploratory study reports the first use of Kelly's Triads to elicit attributes of advertising agencies deemed salient to graduating students of an undergraduate advertising major. Underpinned by Personal Construct Theory, Kelly's Triads is a structured qualitative technique developed over 50 years ago that has proven effective in understanding how individuals differentiate a competitive set of brands, but which has been under-reported in the brand literature. The differences between the salient attributes elicited from students, opinions of an expert panel, and the employer brand scale developed by Berthon, Ewing and Hah (2005) highlight the value of engaging in an inductive stage identifying context-specific consumer input to supplement universally accepted attribute lists for use in structured surveys measuring employer brand image and positioning.*

**Keywords:** Employer branding, personal construct theory, Repertory Test, Kelly's triads, attribute salience

### 1. INTRODUCTION

Branding is a well established topic in the academic literature, with the first papers published during the 1940s (see for example Guest, 1942). In the time since, a recurring theme has been the potential for branding to differentiate an organisation, product or service from competitors (see Gardner & Levy 1955, Aaker 1991, Keller 1993, Kotler, Brown, Adam, Burton & Armstrong 2007). Branding research has generally been undertaken in the context of consumer or trade markets, the growth in interest of which was evidenced during the second half of the 20<sup>th</sup> century, when an estimated 766 major publications by 789 authors were published (Papadopolous 2002, in Anholt 2002). However, the concept of employer branding has emerged relatively recently (see Ambler & Barrow, 1996). The last 50 years has witnessed major changes in the workplace and society; through the technological advancements of the 1960s, industrial strife in the 1970s, the emergence of the 1980s 'enterprise culture', the 1990s recession and corporate downsizing (Cooper & Burke, 2002). This has resulted in a plethora of new challenges and opportunities for management and workers, including: downsizing, restructuring, short term employment contracts, changing roles of men and women, virtual organisation networks, outsourcing, and flattened hierarchical structures. Recent macro environment factors such as the globalisation of labour markets and the aging of baby boomers have created more competition for staff recruitment, which in turn has necessitated management to become more people-centred. However, understanding employer attractiveness from the perspective of potential employees remains under researched, (Berthon, Ewing & Hah, 2005).

In the advertising industry, recruiting and retaining knowledge workers is of vital importance, given as suggested by Saatchi & Saatchi worldwide CEO Kevin Roberts that his organisation is in the *ideas* business (see [www.saatchikevin.com](http://www.saatchikevin.com)). Often the success of an agency in a competitive pitch depends upon the quality of the staff and the creativity of their thinking. Also, traditional advertising is undergoing radical transformation, which is changing the way it is planned, created, channelled and even defined (Richards & Curran 2002, Schultz & Schultz 2004, Malthouse, Calder & Tomhane 2007, Chowdbury, Finn & Olsen 2007). Amidst this turbulence, advertising agencies are also seeking to redefine and reposition themselves. The motivation for this research project was the acknowledgement by the advertising industry in Australia of a severe and worsening talent shortage (see for example AdNews, August 8, 2008, p. L3). The problems resulted in a National Skills Summit called by the Australian advertising industry in 2008. The desire to attract potential graduates has encouraged agencies to launch innovative recruitment programs such as such as DDB's 'Launch Pad' (see [www.ddb.com/careers.html](http://www.ddb.com/careers.html)), which includes a commitment to spend 2% of total revenue



on training programs and support 23 internships in 2008. It is proposed that there will be an increasing need in the future for advertising agencies to develop an understanding of how they are positioned as employers in the marketplace if they are to enhance their recruitment strategies. To do so requires an understanding of the salient attributes that attract recruits to agency brands and how the firm is perceived to perform on these attributes in relation to key competitor employer brands.

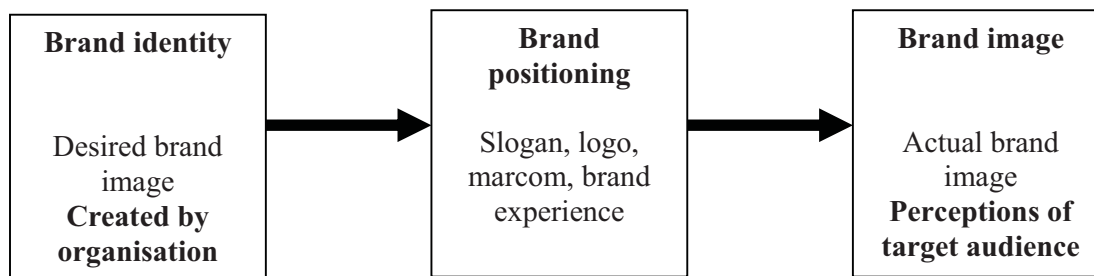
## 2. LITERATURE REVIEW

Definitions of branding are commonly variations of that proposed by Aaker (1991, p. 7):

*... a distinguishing name and/or symbol (such as a logo, trademark, or package design) intended to identify the goods or services of either one seller or a group of sellers, and to differentiate those goods from those of competitors.*

Branding is however far more multidimensional and complex than the design of such tangible signs presented in advertising, sales collateral, packaging and point of sale material. A more holistic view considers the concepts of brand identity, brand positioning and brand image, as shown in Figure 1. Brand identity represents the market image aspired by the organisation. The brand image is the actual image held in the market, which may or may not reflect the desires of the brand identity. Brand positioning is the attempt to cut through the clutter of the marketplace with a focused and meaningful proposition that converts the brand identity into brand image. Research is therefore required to investigate the extent to which brand positioning has been successful in enhancing congruence between brand identity and brand image.

**Figure 1 – Elements of branding**



Employer branding was first conceptualised by Barrow and Ambler (1996, p.187) as “the package of functional, economic and psychological benefits provided by employment and identified with the employing company”. The functional and economic benefits are described by the conditions of employment in a particular organization such as salary, environment and allowances (Kimpakorn & Dimmitt, 2007). The psychological benefits are also identified as symbolic benefits related to the prestige of the firm and the social approval of others and social identity of self that comes from working for the organization (Berthon et al. 2005, Backhaus & Tikoo 2004). Strong employer brands offer many organisational benefits including the enhancement of employee relations, loyalty and retention. In addition, firms can not only acquire the best potential talent to create a workforce that is hard for competitors to duplicate (Backhaus & Tikoo, 2004), but also reduce the cost of acquisition and in some cases even offer lower salaries than competitors (Ritson, 2002). Global human resource consultants Mercer highlighted this as one of their 2008 insights: “We see companies with strong employer brands that are able to pay below the median and still attract and retain high-quality employees” (in Sharma 2008, p 12).

Following Fishbein’s (1967) multi-attribute model, advertising agency employer attractiveness is conceptualised as a function of the attributes sought by the prospective employee and their perception of the firm’s capability to deliver these. This requires an understanding of attribute importance, salience and determinance. For many consumer decisions there might be a large and diverse range of attributes considered important. However, some of these will not be used in decision making. For example, Myers and Gutman (1974) found airline safety an important but non-determinant attribute for business travellers. Rather, determinant attributes were features such as

price, on-board service or schedules. Within the set of important attributes lies a subset of those which are salient during decision making. Salience concerns the top of mind order in which features are elicited, where those considered most important are likely to be offered first. Within the subset of salient attributes are the one or few that will determine the brand choice. It is important to identify determinant attributes to form the basis for a brand positioning campaign (see Lovelock, 1991). Once the range of determinant attributes is known, a decision on which to focus on in communications must be made. This means making trade-offs: "You can't stand for something if you chase after everything" (Ries, 1992, p. 7). Success is most likely when the range of differentiated features emphasised is small, since using more than two attributes will usually result in a confused image (Aaker & Shansby, 1982).

Work on the development of an employer brand scale remains in its infancy. Berthon, Ewing and Hah (2005) conducted focus groups of undergraduate and post graduate students at a Western Australian university to generate 32 potential scale items relating to employer attractiveness, but which were not specific to any industry sector. These items were then tested on a large convenience sample of students, which resulted in a reduction in the number of items to 25. Five dimensions emerged through factor analyses, of which three supported those originally proposed by Ambler and Barrow (1996). The researchers were unable to identify any other studies reported in the literature that had investigated advertising agency employer brand image among prospective employees. Brand image studies typically ask participants to rate a product or service across a battery of scale items. Given the lack of an accepted scale, the purpose of this stage of the research was to identify those attributes deemed salient to undergraduate students in an advertising major.

### 3. METHOD

Due to the lack of an established scale to measure advertising agency brand image within the literature, two inductive approaches were used to develop a list of salient attributes. The first involved personal interviews with prospective employees using Kelly's Triads, and the second sought expert opinion from a panel of practitioners and academics. The rationale for the latter was to identify any differences between the supply and demand perspectives. Kelly's Triads, also referred to as the Repertory Test, was originally designed to operationalise George Kelly's (1955) Personal Construct Theory (PCT). The unification of theory (PCT) and technique has therefore has strong face validity (Downs 1976, Smith & Leach 1972).

Qualitative research requires a purposeful sample of information-rich participants. Another sampling aim is to reach a point of data redundancy, where the addition of any new participants would not yield any new information. Previous applications of the Repertory Test by one of the authors found that half of all data was elicited from the first two participants and that the addition of any new information ceased after 8-10 interviews. A call for volunteers was made to students in the final year of an undergraduate advertising major. These students were in their final semester, and actively considering their career options and agency preferences. A total of 11 interviews were held, at which point data redundancy had been reached. The sample consisted of seven females and four males, all aged in their early 20s. Interviews lasted an average of 20 minutes.

Kelly's definition of a construct was "a way in which things are construed as being alike and yet different from others" (Kelly, 1955, p. 105). The triad card method has been a common approach used to elicit constructs. Elements are presented to subjects in a series of three, usually using verbal labels, printed on individual cards. An element is the object of interest in the study, which in this case was advertising agency brand names. Since elements should be broadly representative of the domain of interest, being meaningful to students and representing a realistic choice set, a three step process was used to develop the list of elements. First, a list of Brisbane-based and national agency award winners was compiled from the 9<sup>th</sup> AFA Effectiveness Awards, the 2007 Effie Asia Pacific Awards, the 2008 Cannes Lions International Advertising Festival and the 2008 Brisbane Advertising and Design Awards. This resulted in 15 national agencies and 11 Brisbane-based agencies. Second, students in a final year advertising unit were asked to list, unaided, those agencies they would prefer to work for. This resulted in 15 national and Brisbane agencies. These lists were merged and nine agencies selected as being represented on both the student and award winners lists. On presentation of each triad, subjects were asked one question: "When thinking of advertising agencies as a career choice, in what important way are two of these agencies alike, and different to the third?" Participants were advised that the technique was not a test of their abilities, and that there were no

wrong answers. They were also advised that no repeated statements were permitted. At the point when a participant could not identify any new similarity/difference, one further triad was attempted. When no more similarity/difference statements were elicited, participants were asked if there were any other important agency attributes not already mentioned. This rarely resulted in any new attributes. The few that were mentioned were included with the Repertory Test data.

Also during August 2008, expert opinion was sought to obtain the supply side perspective. A panel of five advertising agency managers and five advertising academics around Australia were asked to offer their views on what attributes of agencies they considered would be important to graduates seeking employment in an advertising agency.

#### 4. FINDINGS

The 11 students used an average of 6 triads to generate an average of 11 statements. A total of 120 statements were elicited. The statements elicited from the first four participants represented 87% of all statements, demonstrating how quickly data redundancy manifests in applications of the technique. The 120 statements were then grouped into common themes of similar wording. Of interest was the commonality of label categories, rather than the extremes of idiosyncratic individual constructs. This process resulted in the development of 15 themes, which are shown in rank order of popularity in Table 1. A co-researcher was asked to verify the findings, using the categorisation criteria recommended by Guba (1978), which proposed that categories should feature internal homogeneity and external heterogeneity. The expert opinion resulted in a pool of 58 statements. These were grouped into eight themes of similar wording, and are also shown in Table 1.

TABLE 1 – FINDINGS

Theme	Kelly's Triads rank	Expert opinion rank	Included in Berthon, Ewing & Hah (2005)
Well known brand	1		
Graduate friendly	2		
International work opportunities	3		
Large company	4	5	
Innovative company	5		*
Right kind of clients	6	1=	
Youthful culture	7		
Good working conditions	8	4	
Fun & friendly workplace	9		*
Good reputation for their work	10	1=	*
Brag value	11		
Good location	12		
Training programs	13		
Job security	14		*
Social marketing opportunities	15		
Nature of the agency		6	
Culture suits employee		7=	
Opportunities for advancement		1=	*
Good salary		7=	*

#### 5. DISCUSSION

This paper is concerned with advertising agency brand image among prospective employees. Specifically this exploratory study reports the first use of Kelly's Triads to elicit attributes of advertising agencies deemed salient to graduating students of an undergraduate advertising major. The differences between the salient attributes elicited from students and opinions of an expert panel highlight the value of engaging in an inductive stage identifying context-specific consumer input to supplement universally accepted attribute lists for use in structured surveys measuring employer brand image and positioning.

There are two implications evident from the data in Table 1 in relation to the development of a scale to be used in measurement of an employer brand image and position. Firstly, the differences in the findings with the scale developed by Berthon, Ewing and Hah (2005). This illustrates the potential danger in borrowing a scale from the literature that has in not context-specific. Secondly, there are a number of differences in the perspectives of the students in comparison to those in the expert panel. This also

illustrates the value of seeking input from the target segment at the questionnaire design stage. Perhaps the most ironic finding in this regard is that students were shopping for a *brand* of advertising agency, an attribute that did not emerge in the opinions of the expert panel, nor in the employer brand scale developed by Berthon, Ewing and Hah (2005). Economic concerns such as good salary, opportunities for advancement and job security were last on the students' list, yet. Also many of the factors which the expert panel rated highly, such as "right kind of clients", "good reputation for their work" and "opportunities for advancement" were less important to students than to the expert panel. The strongest of these are the more emotive for the students (social, development and interest), while rational factors such as development and economic are more prevalent in the responses of the expert panel. While the research was undertaken in an Australian context, it is suggested researchers in other parts of the world could screen the suitability of the attribute list for through focus groups.

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# FINANCIAL KNOWLEDGE: AN EXPLORATORY RESEARCH OF ATTITUDE OF PRIMARY SCHOOL STUDENTS', PARENTS, AND TEACHERS

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## ABSTRACT

*Attitudes and behavior in daily financial affairs are examined to reveal possible scale items related to theories of financial education, knowledge, behavior, and literacy of a community in Thailand as a part of social service project of a Thai private university. The research methodology was conducted using semi-structured interviews to deeper understand the problem domain. Teaching young children at the age of 11- to 12-years-old about financial matters should be a great way to embed positive financial behaviors. Such understanding is expected to result in a better community service project for other universities. These preliminary results are also likely to assist developing a research model for future quantitative approaches.*

**Keywords:** Financial Literacy, Financial Knowledge, Financial Education, Financial Behavior

## 1. INTRODUCTION

The capability to manage individual's personal finances has become increasingly important in today's world (Ferrari, 2007; Greenspan, 2005; Morton, 2005). Many studies have shown that students' lack of financial knowledge refrain them to make informed decisions. As a result, poor financial choices are likely to produce a large number of negative and long-term consequences (Ferrari, 2007). "The teaching of frugal living and saving as much as possible is prominent and consistent from early school grades to higher grades" in China (Chan, 2006). Chinese children were revealed to be "ethical consumers" referring to social, political and environmental responsibility in consumption from early ages. Life was stressed in the Chinese textbooks as simple and frugal. "The textbooks did not portray any western consumer values of modernization, individualism, youth, or hedonism"(Chan, 2006). Also, wasting goods was portrayed as sin (Chan, 2006). Moreover, Russian researchers emphasized that studies on early childhood development and education revealed the strong cultural influence on children's development. By focusing on interactions between educators and children, children's development could be advanced by providing them with new cultural tools (Veraksa & Oers, 2011). Nevertheless, some researchers stated that it has always been known that children can grow up to be consumers of marketing systems (J.U. McNeal & Yeh, 1990). The amount for the consumer behavior is estimated to be about \$4,400 yearly for US children 4 to 12, or approximately \$150 billion annually (J.U. McNeal & Yeh, 1993). Nevertheless, the National Statistical Office of Thailand further reported head count index in 2007 is 8.48% and that of 2009 is 8.12%. Head count index was conceptualized as the proportion of the population for whom consumption (or other measures of living standard) is less than the poverty line. Even if the head count index had decreased, it reduced only 0.36% within 3 years. The information is likely to confirm that the Thai people are still poor in general. In "Thailand, where the Asian financial crisis broke out in 1997", a researcher identified "morality or ethics as a remedy frame for the global economic crisis" (Supadhiloke, 2011). "Based on the Buddhist precept of middle path sufficiency economy", "His Majesty the King's philosophy of sufficiency economy" has been widely implemented in all fields of studies throughout the country especially financial field. Therefore, the purpose of this study is to explore attitude of primary school students, parents, and teachers toward their financial knowledge in Thailand.

## 2. LITERATURE REVIEW

Financial education is necessary to children because it is likely to persist into their own adulthood (McCormick, 2009). Interestingly, the majority of youth in developing countries who do not go directly on to secondary or postsecondary education are quickly faced with adult financial tasks and responsibilities (Khanam & Ross, 2011; Ngware, Onsomu, Muthaka, & Manda, 2006). After the Asian financial crisis in 1997, Himalayan nations had consented to find an alternative solution for economic model based on "Asian values of compassion, alms giving, community cohesion and networking" (Supadhiloke, 2011).



During the emerging economy of Thailand after the subprime housing loan crisis, the “Buddhist economics” concept “developed by British-based economist E.F. Schumacher” had become a current topic for discussion in Thailand (Supadhiloke, 2011). Many researches confirmed that the needed system of “education and training must provide Thai people with self-sufficiency and adaptability” (Rigg & Ritchie, 2002; Witte, 2000). The philosophy of sufficiency economy stated by His Majesty the King of Thailand includes three major elements: “moderation, reasonableness, and self-immunity” (Supadhiloke, 2011). The philosophy supports development lifelong consumption of resources and concern for social and environment impact of economic decisions (Supadhiloke, 2011). Another aspect of financial education reveals evidence that children’s savings accounts are positively related to their math scores. Those who have a savings account may be more likely to have higher math scores than children without a savings account (Elliott, Jung, & Friendline, 2010). This finding indirectly points out that the youth’s access to a savings account provides them with a chance to integrate their classroom’s content with “a tangible and beneficial financial product, offering more opportunities to learn about financial issues and economic principles than children who do not have a savings account” (Elliott, et al., 2010). In some countries, teachers were expected to do community work and pay home visits to the houses of students; as a result, they built close relationships with parents and students (Rao, et al., 2003). Therefore, financial education includes any curriculum that relates to knowledge, attitudes, and/or behavior of an individual toward financial topics and concepts (Ferrari, 2007; Valentine & Khayum, 2005).

Financial knowledge defines as knowledge of financial issues such as bank accounts, investments, mutual funds, mortgages, credit cards, loans, social security, insurance, and taxes (Fox, Bartholomae, & Lee, 2005; Knutson, 2007). Past researches illustrate that young children think about saving for short-term goals but do not understand saving for long-term goals until they reach about 12 years of age (Elliott, et al., 2010). Children between 6 and 12 years of age could develop more abstract economic reasoning. They would understand the value of saving in a bank, which would not only yield interest, but also protect their money from spending by themselves and others (Beutler & Dickson, 2008; Elliott, et al., 2010). Families with children had numerous household accounts that were planned for certain purposes and subject to negotiation within the family (Winnett & Lewis, 1995). Chen and Volpe (1998) confirmed a link between financial knowledge and financial decisions. Based on a 36-item measure of knowledge, “more knowledgeable students achieved higher scores on hypothetical spending, investment, and insurance decisions when compared with less knowledgeable students” (Chen & Volpe, 2002).

Financial behavior includes those related to “establishing a bank account, increasing savings, using credit wisely, avoiding over indebtedness, applying for micro finance loans, adopting new technologies, reducing chances of fraud, choosing the right insurance, reporting abuse, and shopping around and comparing offers” (Robb & Woodyard, 2011). Children are in stores and walk through retail venues an average of two to three times a week, “exceeding in a typical week the time dedicated to reading, church attendance, youth group and household activities, and outdoor play” (Suiter & Meszaros, 2005). A study in 1997 addressed that there were more than 800 million children, ages 4 to 12 years, in the industrialized world who would make purchases for their own needs and wants once they had been socialized into the consumer role. For example, the US children at the age of 4 to 12 would spend around \$250 per year, or about \$8.5 billion per year for the 34 million youngsters in the USA (J. U. McNeal, 1991). In China, many daily newspapers sometimes reported interviews with mothers or fathers who described their children’s influence on some of their economic decision making (J.U. McNeal & Yeh, 1997). Goll observed that Chinese children were being showered with everything from candy to computer games (Goll, 1995). In China, eleven- and twelve-year-old boys spend significantly more than girls, largely “by taking a small amount out of savings” (J.U. McNeal & Yeh, 1997). There was an evidence that the 11- and 12-year-olds in China usually did not go to the marketplace with their parents because they had to study for middle school entrance exams. There was a tendency for girls to shop more often with parents (J.U. McNeal & Yeh, 1997). Due to China’s historically socialist economy to its culture, the early saving of money in Chinese childhood contributes to the development of one’s prestige, or face, or what the Chinese would call “mien tsu”. Grandparents who lived in the children’s households are providers of money to the children, with favor to girls more than boys. They also are expected to fill some requests of children for a number of products, especially books, toys and foods (J.U. McNeal & Yeh, 1997).

Literacy refers to the possession of basic knowledge or competence, and education in order to build capacity (McCormick, 2009). Financial literacy refers to ability to read, analyze, manage, and communicate his/her personal financial conditions affecting their well-being. It also includes the ability to choose, understand, and discuss about money and their financial choices without discomfort (Johnson & Sherraden, 2007; Knutson, 2007). Advertising are heavily targeted and influenced children (Suiter & Meszaros, 2005). Networks Financial Institute tested the core concepts of financial literacy—including goal setting, 7 philanthropic giving, earning, saving, and spending- from the very earliest grades in order to make transition into financially literate consumers (Godsted & McCormick, 2006)

### 3. METHODOLOGY AND PRELIMINARY FINDINGS

One-to-one interviewing is one of the most effective ways of exploring young children's thinking (Dunphy, 2010). The purpose of this study is to provide deeper understanding of the problem domain. Then, the exploratory and preliminary study was conducted using interviews. Revealing possible factors and theories would further develop conceptual framework. In-depth interviews of 4 students (5<sup>th</sup> and 6<sup>th</sup> grades), 4 parents, and 4 teachers of a primary school in Pathum Thani province of Thailand were accomplished. These twelve respondents were conveniently selected as a part of a community service project organized by a private university in Thailand. These interviews were largely guided by the interview protocol derived from the study's theoretical constructs. For examples, "What is your attitude toward bank accounts, investments, government savings' certificates, credit cards, loans, insurance, and taxes?" "What is your perception toward curriculum related to financial topics and concepts?" "What is your understanding about the differences between buying products or services by cash or payment installations?" "What is your attitude toward debt, interests, and principle?" "What are your thoughts about discussing financial issues with your family members?" "How do you classify which ads are financial propaganda?" "What are your behaviors before making decisions to purchase an item or a service?" "What are your saving behaviors?" "What are your shopping behaviors?" The interviews were conducted in February – March, 2012. Data were coded for common categories and patterns in order to reduce the information to meaningful categories. Disagreements in coding were discussed and the differences resolved. Evidence of each dimension from the qualitative data of the respondents was interpreted in Table 1.

TABLE 1: ANALYSIS OF QUALITATIVE FINDINGS

<u>Respondents' Comments</u>	<u>No. of respondents mentioning</u>	<u>Theoretical Relevance</u>
<ul style="list-style-type: none"> <li>○ I study how to save my money in the social study class since my 1<sup>st</sup> and 2<sup>nd</sup> grade. I learn how to put money in coin tube and how to save money in a bank.</li> <li>○ My teacher taught me to put 2-3 baht in coin tube and once the tube was filled, she told me to put in a bank.</li> <li>○ I learned how to do income-expense list since 4<sup>th</sup> grade.</li> <li>○ I have classes that teach me how to save or create items for sale.</li> <li>○ I have classes that teach me sufficient economy.</li> <li>○ I teach my students to put coin money in the tube.</li> </ul>	3  2  1  1  1  <u>1</u> Total of 9	Availability of Financial Education.
<ul style="list-style-type: none"> <li>○ I know that there is a saving program for a person's funeral. A person needs to pay 400 baht per month.</li> <li>○ I know credit cards, bank accounts, social security, life insurance, free health-card from the government.</li> </ul>	1  <u>12</u> Total of 13	Availability of Financial Knowledge.
<ul style="list-style-type: none"> <li>○ I will compare prices of my products before purchasing. For example, I will check and buy the cheapest price for a box of milk.</li> <li>○ I control my own spending each day.</li> <li>○ My children wanted dresses because she became teenagers.</li> </ul>	2  2  1	Availability of Financial Behavior

○ I do my own income-expense list.	1	
○ I save my money in banks.	1	
○ I do not like to be in debt.	1	
○ I received money from my children in order to take are my grandchildren.	2	
○ Best way to save is to buy gold.	1	
○ I do not save because I do not have enough money to save.	1	
○ If I am in debt, I plan to pay back both principals and interests.	3	
	Total of 15	
○ I do not have any long-term saving plan for my future.	5	Availability of Financial Literacy.
○ I know Government Saving Bank's savings certificates, but I will not invest in them.	7	
○ I do not know any other type of investment except saving money in banks.	5	
○ If I have money left, I will spend it with necessary products and services for my living.	5	
○ I teach my children to save.	1	
○ I do not like to buy items with payment installment because I do not want to pay for interests.	4	
○ I do not believe in financial propaganda.	1	
	Total of 28	

Note: The number of respondents mentioning refers to the number of participants who provided one or more of the responses shown in each respective category. Some respondents' responses fit more than one category.

#### 4. CONCLUSIONS, RECOMMENDATIONS, AND FUTURE WORK

Since the individual personal finance has become prominent in today's world, many researches confirmed that financial knowledge of students to make correct decisions for their financial future is still limited. Teaching young children at the age of 11- to 12-years-old about financial matters should be a great way to embed positive financial behaviors. After the financial crisis, Thailand has held sufficiency economy to be the nation solution to her future. This study reveals attitude of primary school students' parents' and teachers toward their financial knowledge in Thailand. Financial literacy, behavior, knowledge, and education have emerged as possible theories related to this context. Interestingly, the fewest number of comments related to financial education may show that finding from previous literature is similar to this Thai community in terms of lacking financial education. These preliminary results provide meaningful insights of how to develop survey questionnaire items for the emerging theories for future work.

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# UNDERSTANDING THE CONSUMER INSIGHTS AND ATTITUDES TOWARDS CONSUMPTION DECISION OF DIETARY SUPPLEMENTS IN BANGKOK METROPOLITAN AREAS

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## ABSTRACT

*Dietary supplements have become an essential part of many Thai consumers. The concept of beauty from the inside, good health leads to external beauty, is practical in Thailand. The market of dietary supplements in Thailand has grown bigger each year with intensity of competition. Understanding the Thai consumer insights and attitudes is an advantage over other competitors.*

*This article comes from analyzing secondary data and the results of the survey of consumers in Bangkok metropolitan areas via distributions of questionnaires. The survey was conducted from July 10 to the end of October, 2011. For collection of primary data, 400 samples consisting of 122 males and 278 females whose ages are 18 or more and income from 5,000 baht or above were drawn from 4 main urban districts in Bangkok to respond to questionnaires. The purposes of the research are to test correlations between buying attitudes and demographic factors.*

*According to the research, importance of dietary supplements correlates with gender, and factors to consider in buying a dietary supplement correlates with education level.*

*Most Thai urban consumers consider buying dietary supplements to support their health. Most respondents consider the product quality in making a purchase decision. Moreover, additional findings reflect that capsule tablet is the most preferred form of consumption, TV is best medium to stimulate brand recognition, personal selling is the most preferred distribution channel, and Amway is the most recognized brand of dietary supplements in Thailand.*

**Keywords:** consumer behavior, consumer insight, marketing communication, marketing, advertising, sales promotion, direct selling, direct marketing

## 1. INTRODUCTION

Dietary supplements are those products that have emerged from a social change. Consumers have different lifestyles and behaviors from the past. With changing daily-life activities plus the increase of less nutritious foods today, consumers need to be more health-concerned. Dietary supplements as well as exercising, therefore, have become popular among today's consumers. This market has grown bigger each year and so is the competition. Dietary supplement in this context refers to food or nutritional supplement intended to provide nutrients such as vitamins, nutrients, minerals, fiber, or amino acid that may be missing or inadequately consumed in a person's diet. Thailand is one of the biggest health supplement markets in Southeast Asia. Therefore, it is a key market of interest among many health supplements companies although the ease of launching products depends on the category in which the Thai Authority classifies the product (Poon 2009).

According to Nielsen, Thailand (2009), across the world, the highest levels of usage of vitamin or dietary supplements were recorded in Thailand and the Philippines (66%) followed by Lithuania (59%), Taiwan and the USA (56%). It was found that usage was more prevalent in North America and Asian countries than in Europe and Latin America. The primary benefit that Thai consumers expect from their usage is a boost to their immune system" (52%), "to cover for a known diet deficiency (50%) and "to ensure the diet is balanced" (43%). Thailand joined the World Health Organization (WHO) in raising public awareness of the potential effects of urbanization on the health of individuals and communities. The campaign is part of the celebration of World Health Day 2010, which focuses on the

theme of “Urbanization and Health.” Statistics in 2009 showed that 22.9 million Thais, representing 36% of the population, were living in urban areas. The campaign contributed much greater to dietary concerns of the general population in maintaining good health, including sufficient intake of vitamins and dietary supplements.

The general purpose of this research is to discover the pattern of consumer thinking and the correlation between specific demographic factors and buying behavior of Thai consumers in Bangkok metropolitan areas. As the market of dietary supplements is attractive, highly competitive and inundated with a number of players, it is a great advantage to understand the consumer insights and behavior which can be used as business intelligence leading to continuous innovations and value propositions to current and prospective customers. The study was hypothesized as a positive and significant correlation exists between perception of importance of dietary supplements and gender, buying a dietary supplement and education levels, and perception of suitable prices and income levels. The study organized as: introduction, the research methodology, the results, and discussion of the results.

## **2. THE RESEARCH METHODOLOGY**

The survey was conducted from July 10 to the end of October, 2011. For collection of primary data, 400 samples consisting of 122 males (30.5%) and 278 females (69.5%) whose ages are 18 or more and income from 5,000 baht (167 \$US) or above were drawn from 4 main districts in Bangkok to respond to questionnaires. The questionnaire is divided into 2 parts; demographic data, and behavioral data.

Statistical tools including cross tabulation and chi-square tests are used to analyze the data and the correlations between buying attitudes and demographic factors.

The results were then analyzed together with secondary data from related books and articles. The procedure started from identifying research problems, designing research methods, designing the questionnaire, selecting respondents using quota sampling, distributing the questionnaires, collecting and analyzing data.

## **3. THE RESULTS**

Of all the samples, 278 respondents (69%) are users of dietary supplements (206 females and 72 males) and 122 (72 females and 50 males) are non-users (31%). From the samples of different age groups, 245 respondents (61.25%) are from 18 – 25 years old, 95 respondents (23.75%) from 26 – 33 years old and 60 respondents (15%) from 34 and over. Of all the samples, 198 respondents (49.5%) are students, 89 respondents (22.25%) private company officers, 49 respondents (12.25%) business owners, 22 respondents (5.5%) government officers, 17 respondents (4.25%) state-enterprise workers, 15 respondents (3.75%) freelancers, and 10 respondents (2.5%) housewives. From the income distribution of Baht 5,000 – 10,000, 10,001 – 20,000, 20,001 – 30,000, and 30,001 and above, 150 respondents (37.5%) have income level between 10,001 – 20,000 Thai baht, 150 respondents (37.5%) between 5,000 – 10,000 Thai baht, 60 respondents (15%) between 20,001 – 30,000 Thai baht, and 40 respondents (10%) 30,001 Thai baht or more. For the education levels, 308 respondents (77%) have bachelor degrees, 64 respondents (16%) under bachelor degrees, and 28 respondents (7%) higher than bachelor degrees.

According to the chi-square tests,  $H_0$  is rejected as asymp. sig (2-sided) of Pearson chi-square equals 0.003 which is less than significant level ( $\alpha$ ) of 0.05. Therefore, considering purchasing a dietary

supplement correlates with gender. Buying a dietary supplement also correlates with education as asymp. sig (2-sided) of Pearson chi-square equals 0.043. The perception of suitable prices correlates with income levels at  $\alpha = 0.002$ .

235 respondents (58.75%) consider buying dietary supplements to *support their health*, 45 respondents (11.25%) choose *curing diseases*, 35 respondents (8.75%) choose *controlling weights*, 32 respondents (8%) choose *buying for others*, 32 respondents (8%) choose *following the social trends*, and 21 respondents (5.25%) choose *product testing*. After the cross tabulation of age groups, it has been discovered that most respondents from all age groups consider purchasing dietary supplements to support health.

166 respondents (41.5%) say *Amway is the first brand in their minds*, 62 respondents (15.5%) choose *Brand's*, 51 respondents (12.75%) choose *Giffarine*, 48 respondents (12%) choose *Blackmores*, 28 respondents (7%) choose *Herbalife*, 14 respondents (3.5%) choose *Nu Skin*, 9 respondents (2.25%) choose *Nestle*, 6 respondents (1.5%) choose *Agel*, and 12 respondents (3%) choose *others*.

For the sources of information for decision making, 167 respondents (41.75%) choose *TV commercials*, 93 respondents (23.25%) choose *out-of-home media* (such as billboards, sky trains, transits), 66 respondents (16.5%) choose *recommenders* (family and friends), 29 respondents (7.25%) choose *sales representatives*, 26 respondents (6.5%) choose *print ads* (including newspapers and magazines), 9 respondents (2.25%) choose *radio ads*, and 10 respondents (2.5%) choose *others*. After the cross tabulation of occupations, it has been found that TV is the most influential source for consumer buying decision.

When asked about factors influencing the buying decision, 194 respondents (48.5%) choose *product quality*, 79 respondents (19.75%) choose *friends and family*, 52 respondents (13%) choose *brand image*, 38 respondents (9.5%) choose *advertising*, 24 respondents (6%) choose *prices*, 5 respondents (1.25%) choose *packaging*, and 2 respondents (0.05%) choose *good tastes*. After the cross tabulation of education, most respondents agree that product quality influences the buying decision.

259 respondents (64.75%) answer that *capsule tablet* is the preferred form of consumption, 95 respondents (23.75%) choose *liquid form*, 39 respondents (9.75%) choose *powder form*, and 7 respondents (1.75%) choose *others*. After the cross tabulation of age groups, it has been found that capsule tablet form is most preferred by all age groups.

191 respondents (47.75%) answer that they want to purchase a dietary supplements from a *sales representative*, 163 respondents (40.75%) choose a *company shop*, 31 respondents (7.75%) choose an *Internet shop*, and 13 respondents (3.25%) choose *telephone ordering*. After the cross tabulation of occupations, most freelancers prefer to buy dietary supplements from company shops while respondents from the rest of occupations prefer to buy from sales representatives.

111 respondents (27.75%) answer that they favor *money-back satisfaction guarantee* as a customer service, 109 respondents (27.25%) choose *customer care during the product use*, 98 respondents (24.5%) choose *health check before and after the product use*, 56 respondents (14%) choose *free product delivery*, and 22 respondents (5.5%) choose *loyalty rewards* (such as gift set). After the cross tabulation, female respondents tend to care most for *money-back satisfaction guarantee* while male respondents care most for *customer care during the product use*.

When asked about the company like *Amway*, all respondents have known the brand and reflect both positive and negative responses. 288 respondents (72%) reflect the positive attitudes, 99 respondents (24.75%) reflect negative ones, while 13 respondents (3.25%) do not answer. For the positive

attitudes, 176 respondents (38.3%) choose *high quality products*, 121 respondents (26.4%) choose *business credibility*, 61 respondents (13.3%) choose *efficient business systems*, 56 respondents (12.2%) choose *lengthy product use life*, and 45 respondents (9.8%) choose *environmental care*. For those who reflect negative attitudes towards Amway, 80 respondents (52.6%) choose *high prices*, 24 respondents (15.8%) choose *much time spent on doing business*, 21 respondents (13.8%) choose *a small number of service centers*, 16 respondents (10.5%) choose *a foreign brand image*, 11 respondents (7.2%) choose *low returns on investment and compensations*.

## 5. DISCUSSION

According to the primary and secondary data, it can be seen that many Thais are health-concerned as more than half of the samples 'use' dietary supplements. Reasons for consuming dietary supplements are often complex, combining social, psychological, knowledge, and economic factors. Attitude was found to be a major predictor of the decision to use supplements (Conner et al 2003).

According to the research, importance of dietary supplements correlates with gender, and factors to consider in buying a dietary supplement correlates with education level. It can still be profitable to launch dietary supplements to more females than male consumers because of a greater number of females and their need situations. Consumers from different education levels reflect different decision making. For example, most consumers with higher than bachelor degrees care for brand image while most of those with less than bachelor degrees care for tastes.

The survey indicates that most consumers consider buying dietary supplements to support their health. Therefore, health supporting benefits may be one of the main selling propositions for marketing dietary supplements. According to the model of Blackwell, Miniare and Engel's (2006), the buying process consists of need recognition, information search, the pre-purchase evaluation of alternatives, the actual purchase behavior and consumption, and the post-consumption evaluation of decision. It is essential to better understand the unmet needs or consumer insights, what a consumer is thinking and hiding. An insight seems to be more associated with emotional benefit than a functional benefit. For example, users may have different perceptions towards iPhone. One may want it to be a fashion accessory rather than just a communication device. Collections and designs of protective cases are released to entice some customers. The same, consumers of a dietary supplement may want something other than just vitamins or nutrients from it but they may want a life buddy which they hardly find in their hectic lives, something that fulfill their confidence. Soft selling is then used to support hard selling. Dietary supplements have been made necessary for several consumers while they have been perceived as unnecessary for others. Therefore, the needs for such products have been triggered by both psychological and social factors.

Nowadays, when a product campaign is launched, the aim is not just to sell that specific product but other items in the same or different product line. It is like those who buy an iPad may also purchase a protective cover, an HDTV adapter, a speaker, and a keyboard. Buyers of a dietary supplement may be led to purchasing beauty care packages and some other recreational services for instance. Selling is endless. But before designing a comprehensive product or service package, a business must understand consumer attitudes and insights.

With the available data and information, a business may make different and possible assumptions. For example, a number of Thai adolescents increasingly using dietary supplements may imply that this group of population can be a great source of revenues; their daily activities are concerned with studying, reading, socializing, social networking, gaming, eating, shopping, movie going, exercising etc. A business must be able to identify its opportunity to make the product an indispensable part of consumers' activities, interests or opinions. Dietary supplements are associated with high-involvement purchases, meaning that the target consumers require considerations. Information search and evaluation of alternatives in buying process are needed because this concerns health. Information from reference groups or recommenders, advertising media such as TV commercials or out-of-home

media, print media, explanations and demonstrations from sales representatives, including personal experiences of using a brand of product may assist consumers in decision making.

According to the survey results, TV has the highest influence on the decision making because it may reflect product credibility and brand recognition compared to other media. Moreover, the highest advertising expenditure is still spent on TV media according to the Nielsen Company, Thailand 2012. And as Thailand is a collectivistic society, consumers tend to make inter-comparison between brands and products (Cowley 2002). Family members and friends have high level of influences on their purchase decision.

Stone et al (2004) states consumer insight has two forms; plural form and singular form. For the plural form, insights are flashes of inspiration, or penetrating discoveries that can lead to specific opportunities. The other form of insight, singular form, is defined as "the ability to perceive clearly or deeply", a deep, embedded knowledge about our consumers and our markets that helps structure our thinking and decision-making. In order understand a consumer, it is then necessary to acquire information and understand that information.

When discussing about marketing mix elements of dietary supplements, consumers consider product quality and selling propositions from a single product or product line that meet their needs, trustworthiness, reasonable prices matching the product or service quality, convenience to purchase a product or the way the product is delivered, communications and marketing promotion to inform, persuade, and remind consumers, and customer retention programs when they purchase a product. And when their purchase decision is satisfactory, their post-purchase evaluation will be positive for the next purchase.

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## ASSESSING THE BIOECONOMIC VALUE OF BIODIVERSITY: THE CASE OF GOM OIL SPILL

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### ABSTRACT

*The principal objective of this study is to provide a tangible, direct assessment to biodiversity so that its loss or endangerment in the event of disasters could be systematically analyzed. The value of biodiversity of a selective sample of the ecosystem was first calculated quantitatively and later compared with the other group. Another aim of this research is to find out the impact of the BP Deep Horizon Oil Spill on biodiversity in the Gulf of Mexico area. The potential loss stemming from species endangerment or extinction is examined in the study. The arguments proposed in this research are: i) the functional differences among species is the defining property of biodiversity, and ii) disasters like the oil spill plays a significant role in the decline of biodiversity.*

*The model and methodology chosen for this study is a biodiversity index that highlights the importance of phylogenetic variations in determining the richness of biodiversity. The model uses information in taxonomic differences, which is phylogeny-based, to quantify the value of biodiversity. Using this index, the study pursues a two-step investigation to examine the impact of Gulf of Mexico oil spill. First, the research conducts a comparative analysis to understand biodiversity distribution of the Gulf of Mexico, in contrast to that of the Chesapeake Bay. Two equal-size groups of comparable species from both ecosystems were selected to form the samples, including many that are considered vulnerable to oil spill. The group representing the Gulf of Mexico also includes species that have been endangered or devastated by the BP oil spill. Next, the study proceeds to calculate quantitatively the potential impact on biodiversity caused by loss of some of the keystone species.*

*The ecosystem in the Gulf of Mexico region has long been known for its species diversity, and it provides vital support to the local economy. The BP Deep Horizon oil spill has brought about pervasive, ongoing disruption to the aquatic food chains. The rampant injuries, mutations, and death of several coastal and marine species in the gulf area have been widely reported. One of the results from this study is that ecosystems of the same number of species could have diverse distribution of biodiversity. The finding from the quantitative analysis confirms that Gulf of Mexico does have higher biodiversity value than the Chesapeake Bay, given the selected samples of the same size. Therefore, it is the diversity of species, not its number, that matters in determining the richness of biodiversity.*

*It was also discovered that losing a keystone species in either of the two ecosystems could cause a significant reduction in biodiversity value. Furthermore, it is revealed that losing the same keystone species in both ecosystems could have different implications in terms of the extent of biodiversity loss. Applying the measurement model, the study was able to show that the endangerment or extinction of spill-vulnerable species in Gulf of Mexico would leave behind a definite and negative impact on the quality of biodiversity.*

*This study makes its contribution in providing a different perspective in understanding the dynamics of biodiversity, its loss, and conservation priority. The results imply that taxonomic distance in species is more relevant than other characteristics of the living organisms in understanding the value of biodiversity and the complexity of the ecosystems. The more dynamic the system is, the higher biodiversity quality it carries. In addition, it shows that the damage from BP oil spill on the biodiversity in the Gulf of Mexico is a tangible fact. Loss of some of its keystone species could be very disruptive to the entire food chains.*

The study also reveals that the more complex the ecosystem is, the more resilient it could potentially be. The empirical evidence from the scientific reports suggests that some of the species initially vulnerable to oil spill are now in the process of gradual recovery two years after the oil spill incidence. This finding provides insights into how to select species for conservation and prioritize economic efforts for risk management. The research concludes with recommendations on options to limit the biodiversity loss from future oil spills, or other similar disasters.

**Keywords:** *biodiversity, bioeconomics, ecological, phylogeny, Gulf of Mexico, Deepwater Horizon, BP oil spill, Chesapeake Bay*

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**Dr. Yvonne Chen** earned her Ph.D. at the University of Wisconsin in 1998. Currently she serves as an associate professor of economics at Shenandoah University and a consultant in international business. Her biography can be found at *Who's Who of American Women*.

## RELATIONAL-BASED AND PATIENT-DRIVEN GOVERNANCE: FINDING AN OPTIMAL FIT BETWEEN THE PATIENT AND THE PHYSICIAN

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### ABSTRACT

*One of the most important elements of the integrated approach to excellence in the provision of healthcare services is the quality of the relationship between the patient and the physician. Prior literature has typically modeled the physician-patient relationship within the broader framework of the economic theory of agency, underlying the principal-agent nature of interactions between the two main parties involved in the medical service exchange. Implementing appropriate governance arrangements for properly controlling these interactions is a critical concern for boosting the effectiveness of healthcare systems, but extant knowledge in the field is underdeveloped and provides only a fragmented background for understanding optimal governance configurations for the establishment of successful physician-patient relationships. In this article we seek to make our contribution to the literature by undertaking an extensive review of the continuously developing and evolving body of research on the governance of the physician-patient encounter and providing fruitful suggestions for future scholarly endeavors in this field of inquiry. Our analysis of the current state of knowledge on governing the physician-patient relationship results in the identification of the two main streams of research on the relational-based and patient-driven governance devices. Aiming to reconcile the conflicting evidence stemming from these alternative streams of inquiry, we develop the conceptual foundations of a research framework on the optimal governance of the physician-patient relationship which advances the concept of fit between the individual characteristics of each of the parties engaged in medical service exchange.*

**Keywords:** Agency Theory, Physician-Patient Relationship, Healthcare Services, Relational Governance, Patient-Driven Governance, Empowerment

## **“HOLIER-THAN-THOU” PERCEPTION BIAS AMONG PROFESSIONAL ACCOUNTANTS AND ACCOUNTING STUDENTS IN GERMANY**

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### **ABSTRACT**

*Research shows that individuals generally perceive themselves as being more ethical than their peers. This bias, known as "holier-than-thou" perception bias, has implications in accounting contexts because this bias may foster an unethical organizational culture. Specifically, individuals with "holier-than-thou" perception bias may justify their own unethical behavior as needed to compete with their peers. This study contributes to accounting research by examining German professionals from Big 4 accounting firms and German university accounting students. The first objective of this study is to examine whether "holier-than-thou" perception bias exists among both groups. The second objective of this paper is to examine whether the magnitude of "holier-than-thou" perception bias is larger for professionals compared to students. Data was collected through a survey questionnaire distributed to samples of professionals from big accounting firms and university accounting students. The results show that "holier-than-thou" perception bias exists in both groups. However, the magnitude of the difference in "holier-than-thou" perception bias between professional accountants and accounting students was not significant. The findings of this study contribute to the controversial and important topic of ethics in accounting. The findings also have implications for professional accountants, accounting firms, researchers and accounting education.*

**Keywords:** "Holier-than-thou" perception bias; 'Social Desirability Response Bias'; Organizational culture in Big 4 accounting firms; Germany

## MANAGING FAMILY-BUSINESS BOUNDARIES FOR GOVERNING FAMILY FIRMS: A CASE STUDY FROM THE UAE

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### ABSTRACT

*Despite the increasing recognition of family firm importance for national economic development, the family dimension of enterprises in the United Arab Emirates (UAE) represents an area that did not receive sufficient scholarly consideration. This article aims to fill this gap in the literature by pursuing a broader cultural diversification of current family business research. Relying on an in-depth case study analysis of the evolution of a small family firm that has been operating in the UAE for over three decades, we seek to contribute to the enhancement of the extant knowledge base on effective governance practices of family run enterprises located in the Middle East. To understand how family companies are governed in the long run, we examine how different strategies of managing boundaries between family and business domains in terms of organizational culture, employee policies, governance arrangements and financial administration evolve over time between their integration and segmentation extremes and affect family decision making with regards to succession management. We offer several individual, organizational and country-related factors to explain why governance structures in the UAE family businesses look the way they do and discuss what governance combinations might generate superior family firm outcomes.*

**Keywords:** Family Firms, UAE, Governance Practices, Family and Business Domains, Succession Management, Case Study

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