'ARE USA'S AND CHINA'S ARTIFICIAL INTELLIGENCE ACTIVITIES OUTSMARTING EUROPE?' – A CRITICAL ANALYSIS OF AI AND EUROPE'S APPROACH TO IT.

Christina F. Edye, Chair of Mobility, Trade and Logistics, Zeppelin University, Germany
Wolfgang H. Schulz, Chair of Mobility, Trade and Logistics, Zeppelin University, Germany

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ABSTRACT

Artificial Intelligence (AI) is vital for nations and their national industries to remain competitive in the world of digitalization and to ensure growth, employment and overall welfare. AI in the field of transportation would result in benefits for individual drivers, other participants in traffic, as well as process advances for manufacturers and suppliers. Further, a domino effect for society as a whole could be created. This paper explores the European Union's approach to AI, and the road blocks it is currently facing, including analyzing its competitors. AI data does not follow classic economic theories. Here, scarcity is no longer the rule, instead the larger the data sets and information provided, the higher their value. This provides China (large population) and USA (capital resources) with key advantages, due to their ease of generating data, or does it? While the European Commission wants to invest €20 billion to expand AI in the European Union, it has to tackle several issues for AI to be truly effective. One issue is that the union's nations must act together to generate data sets large enough to compete with China and USA. Further, AI built into vehicles will need to be 'smarter' compared to foreign vehicles, to enable handling the complexity of different driving behaviors upon border crossing. While it may take longer to expand AI in Europe, the broader knowledge required could become Europe's advantage for catching up with its competitors.

***Keywords**: artificial intelligence, competition, development, automotive, AI productivity*

1. INTRODUCTION

Artificial intelligence, or 'AI', is the new buzzword of the business world. While the technology industry has been working on and with artificial intelligence for many years, the rest of the economic world is slowly catching up. According to a study conducted by PwC, through the incorporation of AI into businesses and the economy as a whole, China will have increased its GDP by 26% in 2030. Together with the United States of America, who according to the study may enjoy a 14.5% boost in GDP, the two countries will capture 70% of the global economic impact AI will have. (Rao & Verweij, 2017) Europe on the other hand is struggling. Despite its strong economic and technological role, it is becoming increasingly more difficult to compete with other leading technological nations.

The German government lists more efficiency potential for existing business models, as well as creation and enabling of new business models, as a key focus of AI adoption among businesses. AI is applied in the automotive industry, healthcare sector and even administrative areas of governments. Companies such as Amazon and Netflix heavily use AI to improve user/customer experience. Already in 2013, 35% of product purchases at Amazon.com and 75% of movies watched on Netflix were generated through product recommendations, created using AI technology. (MacKenzie, Meyer, & Noble, 2013) From a nation's perspective, they should use AI not only to compete with other nations, but also to improve their economies, labour markets and society as a whole. (Bundesregierung, 2018)

Individual topics such as autonomous driving is becoming an increasing focus not only of the automotive industry, but also the technology industry, as well as governments. Business landscapes and their actors are changing as a result of expanding AI. The previously saturated automotive market has new players, such as Tesla and BYD. But also the technology industry as a whole is competing with companies such as Google and Uber entering the automotive industry. (Gao, Kaas, Mohr, & Wee, 2016) One indicator for the attention given to AI, is the amount of research conducted in its field. Elsevier publisher released a report on AI research development over the past years. In 2017 alone, over 60,000 publications related to AI were