Chapter 10
Artificial Intelligence Leadership:
Imitating Mintzberg's Managerial Roles

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ABSTRACT

New developments in technology may cause massive changes in the organizational and managerial contexts as well as daily life. The aim of the research is to discuss how AI may affect the future of business life in respect to leadership and management. Additionally, questioning the possibility of artificial intelligence leadership. For this purpose, AI will be evaluated with regard to managerial roles defined by Henry Mintzberg. Evaluation of the managerial roles within the scope of AI leads us to think that AI will have a rich potential to lead and manage human beings. According to capabilities of AI, it can be suggested that AI might produce better results than human beings in the context of the managerial roles. AI leadership discussion gives a chance to shed light on today's management practices in a critical manner by comparing imagined AI with human being managers.

INTRODUCTION

People were in a discussion about the idea of cyber workers to replace human being in manufacturing and service sectors for decades until Industry 4.0 has attracted attention to the idea of cyber white-collar workers with new approaches to the high amount of data to be processed, direct communication needs of objects, and more productive business models. Industry 4.0 promises countless massive changes at the business models, production styles, and management systems relating to rapidly developing technology. It can be said it's time to focus on how artificial intelligence (AI) will shape the future of the business and the world accordingly. Accelerating speed of business, increasing importance of time, diversification

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of considerable data sources, difficulties of processing high amount of data and obstacles to evaluate environmental conditions led researchers and practitioners to think about alternative decision-making methods and systems. Decision-making is one of the essential topics of leadership studies. Researchers investigate how leaders make decisions and how the decisions affect the success of organizations (Fernandes & Simon, 1999; Tozlu, 2016). In the context of AI which allows evaluating and processing high data which is flowing from a wide range of sources, leadership studies need to adopt new approaches.

Today, many research projects are being performed to enhance the capabilities of autonomous systems that will be able to make the most sagacious decisions. Mentioned researches carry one step further the expectations from conventional robots and machines. Conventional robots mean repeating certain motions or calculating certain data. Therefore, typical outputs of robots' each activity mostly have no difference. However, AI systems can produce various outputs in accordance to work designs, upgraded data, and its unique learning ability. At present, countless companies are investing in research and development works for AI to have competitive advantages. Usage area of AI is expanding over time; defence industry, medical, power plants and electric power transmission lines etc. US Army Vision reports emphasise autonomous systems and AI for the future modernization plans. Besides the unmanned air crafts that widely utilized at present, autonomous war vehicles are expected to be in use at war operations by 2028 (Edwards, 2018). Autonomous weapon systems might be able to establish targets, search and destroy the enemy units autonomously. Moreover, they might have a role to lead the human being soldiers and other synchronised war machines in the field. Regarding to horrifying skills of AI, 116 founders of robotics and AI companies including Elon Musk sent a letter to United Nations to ban autonomous weapon systems (Bachman, 2018).

The aim of the research is to discuss how AI might affect the future of business life in respect to leadership and management. For this purpose, AI will be evaluated in respect to managerial roles which are defined by Mintzberg (Mintzberg, 1971). Evaluation of new developments in technology is a need to see how business environments evolve. In consideration of anticipations which declare AI will have a very wide range of application, leadership and management fields should not be thought out of this frame. Especially, when it's considered AI researches and leadership studies have various common and main topics such as decision-making, evaluating environmental conditions (processing big data) and enhancing versatile capabilities (learning ability). The current study does not mention the usage of AI applications as an information provider or supporting systems for decision-makers in an organizational setting but mentions cyber or robot leaders with AI that directly and autonomously lead human being employees about how they should work and implement efficient allocation of resources according to organizational goals. Even if AI leadership sounds as anomalous in the context of the current comprehension, rapidly developing technology is leading us to think about cyber leaders in the business organizations.

WHAT'S AI?

The researches in technology development mostly aim to make innovations which replace human beings or living organisms as a part of easier business or life conditions. Developed machines and tools facilitate the business and the daily life. Until the appearance of computer systems, developments were about supporting human being in a physical manner. Computer systems could accomplish solving logical complex problems however they were far from cognitive abilities of human brain. Researchers focused to invent