

## Chapter 16

# Towards an Artificial Intelligence (AI)–Driven Government in Sultanate of Oman: Transforming and Augmenting Leadership Competencies

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### ABSTRACT

*Many tasks that require human intelligence to perform changed to being executed by artificial intelligence such as voice recognition, image recognition, and various predictions. This study investigates how adopting AI-based technologies could redefine leadership roles and identify the gap of critical leadership competencies of AI-based technologies in Oman's public sector. The study used secondary data sources of four Omani ministries. The results confirm that the work of the leaders in Oman's public sector focuses more on administrative coordination, control, developing strategies, and problem solving. On the other hand, there is little attention given to innovation and focusing on developing people. AI-based technologies enhance leader performance and productivity in many areas such as mindful tech-savvy humanist, fostering systemic intelligence, building trust and innovation, developing creative capabilities, fostering leadership skills, enhancing strategic thinking skills, managing uncertainty, and having creative foresight.*

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## INTRODUCTION

Intelligence<sup>1</sup>. Examples for the tasks are voice recognition, image recognition, and various predictions. Machine learning, which is considered as a subset of Artificial Intelligence, has enabled different technologies to learn from experience by using different types of algorithms (Brynjolfsson & McAfee, 2012). Researchers emphasize that AI-based technologies will create new jobs which has no precedent to train, explain, and sustain AI-based technologies in organizations (Wilson, Daugherty, & Morini-Bianzino, 2017).

AI-based technologies in organizations can be divided into three categories: (1) process automation, (2) cognitive insight, and (3) cognitive engagement. Process automation refers to the use of AI-based systems to input and transfer big data by multiple information technologies system. Cognitive insight incorporates using AI-based technologies to recognize and interpret big data. It aims to enhance decision-making process. Cognitive engagement depends on a subset of AI which is Natural Language Processing (NLP). It provides technologies with the ability to interact with humans. (Almarzooqi, 2019).

Recent researches suggest that leadership roles can be altered in the presence of artificial intelligence-based systems. AI-based technologies can help leaders to evolve and expand their roles in a way that makes them more adaptable to new and complicated working environment (Infosys, 2018). According to (Schatsky, Muraskin, & Gurumurthy, 2015), such sophisticated technologies lead to redefining the skills, roles, performance objectives, and management practices and this would ultimately impact the way leaders spend their time on specific tasks. (Kirkland, 2014) argues that unlike traditional leadership, AI-based technologies offer wide range of solutions which result in leaders taking over more complex duties with an ultimate target of directing, motivating and developing their subordinates (Benny, de Waal, & Ravesteijn, 2018).

GCC countries including Sultanate of Oman work in adopting the digital transformation process as a part of a worldwide movement towards using the applications of the 4th industrial revolution (Industry 4.0) where AI is a major part of it. Digital transformation aims to improve and optimize work efficiency and processes. Innovation is considered a base for economic growth, diversification and job creation in digital economy in Oman Vision 2040. The IT market in Oman is expected to grow by 8% by 2021, which indicate that digital adoption is ripe among the main market sectors. (Oman Observer, 2019)

According to The World Economic Forum's Future of Government Report, government structures and processes need to be redesigned due to the complex and changing working environment. This is exhibited in the process of digital transformation carried out by the Sultanate of Oman to improve the quality of life and achieve economic growth. There are many AI applications that Oman works to demonstrate such as chatbots, traffic congestion and car accidents prediction, Predicting and identifying diseases and hazards, anticipating cyber-attacks and big data analysis. (E.Oman, 2019)

Oman's government established many institutions in order to keep pace with the fast changes during the last 20 years. Recently in 2019, the governments established the Ministry of Technology and communication, which is responsible for Oman's Digital Strategy and developing IT infrastructure. Oman's Digital Strategy looks for adopting the best practices in e-Governance and advanced technologies including AI-based technologies in order to improve the overall efficiency of government performance. (MTC, 2019)

This strategy will change the current structure of the government to be intelligent and relying on AI-based technologies. It will contribute in developing and improving the work quality in Oman's government (MTC, 2019). Hence, the adoption of AI based technologies will change the work process and structures

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