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Transformation of the Public Administration in the Impact of Artificial Intelligence Systems

Yazar: Atilla Aydın

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In this article, we will shed light on the transformation of public administration, which is inevitable under the influence of artificial intelligence, and the practices and policies of states as an organization against the new situation. The entire chapter, which has been reviewed and summarized here, could be found in the book **"Artificial Intelligence and Future"** edited by Prof. Gonca Telli.

Modern states, whose conceptual foundations were laid **in the 17th and 18th centuries**, became a world-wide accepted administrative system in the following two centuries. However, dynamics have changed rapidly, especially in the **last 50 years**. The influence of digital technologies in this process cannot be denied. Moreover, the discussions based on artificial intelligence have an ontological basis beyond a more effective management approach. In fact, **in the first quarter of the 21st century**, social structures transformed by algorithms and artificial intelligence-supported technologies, it was a period in which the conflicts with the concepts of the analogue period came to light.

States are the first users of information technologies and the largest customers. It has been available for many years in many civil and military applications where algorithms undertake tasks such as pattern recognition, prediction, optimization, sequencing to provide decision support. These scope has expanded in recent years [1]. The widespread presence of solutions based on artificial intelligence within the country's sovereign domain increases the **social dependence on these systems**. This first raised worry about the following authority and control:

- Artificial intelligence algorithms are written by people and they learn by reference to loaded digital data. Therefore, there is the potential to be biased or **copy our existing mistakes**.
- Algorithmic systems, with their complex structures, create uncertainties about which criteria the system operates. Therefore, **secret functioning -black box- systems** are becoming increasingly common.

On the other hand, in order to examine the transformation of administrative paradigm in the relation of artificial intelligence, it is necessary to make evaluations at least in the following framework:

- The transformation of the state as an organization in the transition of social order
- The transformation territory and population
- New applications in the execution of state power
- New situations under freedom, national security and sovereignty

In short, I will try to make an evaluation with the examples in this framework.

States may have the rational for applying artificial intelligence technologies, such as increasing **“managerial efficiency”**, **“improving citizen experience”** and **“accelerating economic development”**. However, even more important and the survival instinct for states is to predict the consequences of power relations and to act. With digital technologies, territory has been transformed first. The traditional field of states is **land**. However, **the cyber space that emerges with digital information technologies is both an independent artificial space and envelops existing spaces**. Today's technologies re-emerge the spatial management paradigm at the cyber-physical intersection.

Artificial intelligence technologies take the situation further. Real and legal persons are today's accepted definitions. However, the way in which artificial intelligence systems can be addressed is an important topic of discussion. **In 2017**, for the first time in history, although there is no real social field, partially artificial intelligence, **“Sophia”** has been **granted citizenship** by the state of **Saudi Arabia** [2]. Today's technologies reproduce the population paradigm at the cyber-organic intersection.

On the other hand, it is necessary to evaluate under the **[legislative]**, **[executive]** and **[judicial powers]** in order to examine the point where the use of artificial intelligence comes in practice. The greatest changes in the management paradigm with the entry of artificial intelligence to social life depend on how the legislative power responds to the new reality. Artificial body or autonomous systems **(service robots, autonomous weapons, voice**

assistants, process software, driverless land, sea and air vehicles etc.) as these systems become widespread, their responsibilities in activities and the possibility of being involved in actions that may require legal action increase. For example, **in 2018, the driverless vehicle of the Uber company, tested in Arizona, USA, was involved in a fatal accident for the first time in history**. However, human error is at the forefront in this accident [3].

Public services will be the area where the opportunities and challenges of artificial intelligence are on the top of the agenda and felt to the individuals. New applications are developing, such as autonomous voice assistants, that will radically change our communication habits. Reducing documentation-based and repetitive work can help employees concentrate on their core business and **personalize public services such as education and health** [4]. The use of technology in social security and public order services is emerging as well. For example, the **China** is implementing the **[Social Credit System]** that it has gradually developed through regional pilots. The country plans to make reliability ratings for all its citizens thanks to the collected digital data and artificial intelligence supported subsystems. The main objective of the system is to make individuals **"better citizens"** [5].

In the field of judiciary, expert systems trained on past decisions have a high success rate. **[Virtual judge application]** in terms of decision support is **used in China** for small cases. However, there is no active practice in courts where the final decision maker is an artificial intelligence system. On the other hand, analysis software, which extracts specific patterns from large volumes of documents, makes a significant contribution to lightening the workload [6].

For the effective execution of the judiciary, criminal acts should be legally recorded and presented as evidence. However, nowadays, audio and visual moving content is artificially **produced instantaneously** with the name **"deepfake"** [7]. For example, **it has been shown that a 3.7 second recording is enough to copy a human voice** [8].

Artificial intelligence systems and robotic applications will become more widespread in the coming period. However, an important issue here is how and where these systems are developed. The **USA, China, Russia** and **European countries** are making big investments in this field and leading the field. The most important motivation on the state agendas seems to be not to stay behind in the race compared to other countries. For example, the **French National Artificial Intelligence Strategy** launched in **2018** puts forward the vision of **restoring Europe's digital sovereignty for artificial intelligence** in the face of the US's largest digital technology companies and China's policies [9]. There are different indices comparing national artificial intelligence studies. In this sense, Turkey is situated in the middle level [10]. Although there are important studies, **Turkey's national strategy is targeted to be announced by the end of 2019**.

Artificial intelligence systems are a technology that modern states cannot give up at the level of development that today's societies have come to. Currently; studies continue in the presence of many challenging policy areas such as ethical uncertainties, digital data management, privacy, national security, technical superiority of global technology companies, legal framework, employment and acquisition of new skills. As algorithmic management techniques become more widespread, the application of the principles of **audit, accountability** and **transparency** becomes more important. The role of states is more and more important than any other organization. **States must achieve their own structural and personnel transformation required by the era and to implement the necessary facilitation, supervisory, preventive and regulatory policies for the preservation of social welfare and global peace.**

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