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Possible Effects of the Development and Use of Artificial Intelligence Intended for Journalism Sector[1]

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Abstract

Nowadays, both the usage rate of information technologies and the equipments and communication systems within the scope of information technologies have taken development levels. In the last case reached in the process of the Third Industrial Revolution (Industry 3.0), 4th generation information technology tools and systems are widely used in all basic sectors. Within a short time, it is foreseen that the 5th generation information technology tools and systems will be used. 5. generation of information technology tools and systems differ significantly from previous tools and systems. With the introduction of 5th generation information technology tools and systems, it is intensely discussed that a new industrial revolution will start, namely the process of the Fourth Industrial Revolution (Industry 4.0).

The tools and systems which are among the 5th generation information and communication technologies to be effective during the Industry 4.0 process; artificial intelligence a, "cloud computing system", "digital environment (Internet of Things)" and 3D printer are prominent. In this study, artificial intelligence, which is also called "logical analysis robot which is considered as one of the main tools of information technologies, has been chosen as the main subject. In this context, it is aimed to investigate the possible effects of developing artificial intelligence on journalism sector to journalism sector, which is fully operating using information technologies.

In this study, the concept of artificial intelligence is discussed and the predictions about its scope are analyzed. Then, the current situation regarding the level of usage of information technology in the journalism sector is examined. Then, fictions about the development and use of artificial intelligence for the journalism sector are discussed. Finally, the possible effects of the use of artificial intelligence in the journalism sector are analyzed. As the method of the study, theoretical examination (literature review) and editing methods are used.

Keywords: Artificial Intelligence in Journalism, The Effects of Artificial Intelligence, Industry 4.0 and Journalism

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1. INTRODUCTION

With the development of technology, innovations in the industrial sector have initiated the transition to the so-called "Digital Age" period. In recent years, there has been a large-scale revolution involving all sectors, especially in the industry. With the introduction of new business models, communication tools and ways of working have begun to change. With the diversification of information sources, information is spreading more easily and quickly. Today, the way of life of societies is affected by this situation, as everything changes very quickly. As a result of such a comprehensive and rapid change, it is accepted that a new era called the Digital Age has began. It is anticipated that the journalism sector, which is a sub-branch of the service sector, will also undergo change and transformation within the scope of the Digital Age.

In the process of transitioning to the Digital Age, modern technology-driven machinery and systems such as cloud computing system, internet of things, cyber security, and three-dimensional printers are used. In this study, the concept of artificial intelligence, which is envisaged to contribute greatly to the sector when the possible areas of use in the journalism sector are wide and managed correctly, is discussed. The aim of the study is to discuss the possible effects of the development and use of artificial intelligence for the journalism sector. .In the three-part study, artificial intelligence is primarily discussed conceptually. In the second chapter, the process of digitization in the journalism sector and the use of artificial intelligence are examined. Finally, insights into the development and use of artificial intelligence for the journalism sector have been shared. In this study, literature review and editing methods were used together.

2.DEFINITION AND SCOPE OF THE CONCEPT OF ARTIFICIAL INTELLIGENCE

Artificial intelligence is defined in the dictionary as “the ability of a computer or a robot under computer control to perform various activities in a similar way to intelligent living things”. The concept of artificial intelligence was first dealt with by Alan Turing. In his article “Computing Machinery and Intelligence olduğ published in 1950, he questioned the ability of machines to think (Turing, 1950). In the conclusion, he acknowledged that machines were thinking mechanisms and rejected opposing views.

The first important step in artificial intelligence was taken in 1956 at the Darthmouth Conference in the United States. John McCarthy (1927-2011) is the founder of today's artificial intelligence technology (Akbulut, 2012: 1). Herbert Simon in 1957 “to surprise or shock is not my purpose, but the simplest way I can summarize is that there are machines in the world that are thinking, learning and creating. Moreover, their ability to do these things will increase rapidly to a visible future, and the variety of problems they can address will be wider with the range in which the human mind is applied Rus (Russel and Norvig, 2010: 20-21). Artificial intelligence studies in Turkey began in the 1990s. The first five-axis robot was built, and in 1994 the first industrial robot was produced. Akınrobotics company established in Konya produces humanoid robots and the robots of the company serve as waitresses in some cafes in Konya (Yülek, 2018).

Artificial intelligence is one of the most rapidly developing technological fields in recent years. This makes it difficult to make precise predictions and assessments for the

development of artificial intelligence. The rapid development of artificial intelligence makes it easier to use in some sectors. However, the unpredictability of its development explains that artificial intelligence has not yet begun in some sectors. In the sectors where the predictions that artificial intelligence will facilitate the work of the people are the majority, extensive investments are made in the field of artificial intelligence.

Automation greatly changes the way the journalism industry works. With the use of computational journalism written by machines, journalism has entered a new stage (van Dalen, 2012: 649). There are different views on the future of artificial intelligence technology. Negative views pertain to the fact that this technology can be programmed to harm people. There are also concerns that artificial intelligence, which is designed for good business, can ultimately cause harm. The underlying reason for the negative views is directly related to the magnitude of the harm that artificial intelligence can bring. The point here is that when artificial intelligence becomes uncontrollable, it is not yet known what can be encountered or how to avoid it. Another negative view of artificial intelligence is that the robots will take away the things people do. Although there is a fair share of this anxiety, it is not possible to say for sure that artificial intelligence will increase unemployment. Artificial intelligence technology has the capacity to undertake the routine tasks of people. Furthermore, with the developed technology, qualified labor force capable of controlling complex systems will be needed. Therefore, artificial intelligence is not expected to create unemployment, but to create new jobs.

Thanks to artificial intelligence technology, it is possible for machines to learn user habits. For example, suppose you are a user who often plans to travel to Europe on the internet. The user also listens to pop music every day from an online music platform. After a certain period of time, the user will start to see news about European pop music, concerts and festivals on the dates he plans to travel. This is because smart machines learn user habits or preferences and develop user-specific recommendations. Although there is a positive picture in terms of pop music, safety problems can arise when it comes to advanced machine learning. It may be possible to share on behalf of the user on social media or to access internet banking information. In such cases, systems based on advanced artificial intelligence technology that can perform good defense will be needed.

3. DIGITAL DEVELOPMENTS AND THE USE OF ARTIFICIAL INTELLIGENCE IN JOURNALISM SECTOR

Since computer development in the mid-1940s, machine or artificial intelligence has become an important subfield of computer science (Flew et al., 2012: 158). His research interests are in robotics, reasoning, language and speech processing, machine learning and problem solving. The key to new informational approaches, which is an example of informational journalism, is that human and computer-aided approaches are seen as complementary or supplementary (Flew et al., 2012: 159). Increased computational resources, an increase in the size of the data, a focus on specific problems, information engineering and alternative reasoning models through machine learning have contributed to the real emergence of "smart" machines (Linden, 2017: 127).

In recent years, "automatic journalism" or "robot journalism; algorithms, artificial intelligence software platforms and natural language creation techniques are based on new and unusual uses (Montal and Reich, 2017: 829). Increasing use of artificial intelligence is

defined as algorithmic rotation. Today, algorithms are accepted as calculations that run simultaneously with decision-making processes. Artificial intelligence algorithms, autonomous decision-making and self-learning capabilities can replace people with many tasks. It will be decisive in the future of journalism as it contributes to many different stages in content production and performs ordinary journalistic functions.

The World Economic Forum (WEF) held in 2016 addressed the Fourth Industrial Revolution (WEF, 2016). The forum focused on topics such as driverless vehicle systems, machine learning, biotechnology, robotics and artificial intelligence. The revolution, also known as Industry 4.0, is widely accepted to change work and professions. In this context, the journalism sector is considered as one of the areas that will be subject to change. There are already many examples of autonomous journalism. Such a program is used in the Los Angeles Times for news about the murder (BBC, 2014). The Washington Post uses a program called Truth Teller to validate politicians' speeches (Butler, 2013). Since 2015, the Associated Press (AP) has utilized a mechanism that automatically automates news production. This mechanism can produce approximately two thousand news per second (Watry, 2016). The development of robotic journalism enables news production without human intervention. This situation leads to questioning the future of journalism. The most critical question here is whether the people involved in the profession of journalism will be a threat to themselves in the professional sense. The increase in news production based on artificial intelligence brings about discussions. Language processing programs make it difficult to distinguish a news text produced by artificial intelligence from what a person writes. When all the developments are evaluated together, the discussions about whether robotic journalism will fulfill the tasks of journalists will be strengthened or not.

4. EVALUATIONS AND PREDICTIONS FOR USING ARTIFICIAL INTELLIGENCE IN JOURNALISM SECTOR

Automated journalism based on artificial intelligence is called robotic journalism. Robotic journalism is the incorporation of numerical data into pre-prepared template news texts. By analyzing big data, it is possible to produce complex news texts. By using natural language processing technique, texts can be produced through artificial intelligence at a level very close to what a person writes. In a summary article published by Google on artificial intelligence studies, it is stated that human thought structure can be taught to artificial intelligence (CHIP, 2018). When all these developments are evaluated together, it can be said that artificial intelligence can create original and fluent texts at the level written by man.

The use of artificial intelligence technology is expanding day by day. In the journalism sector, which is considered within the scope of the service sector, examples of artificial intelligence are used. In China, an artificial intelligence called Chao Ning Shiaobay, which means “Super Little White”, is used as an announcer (Sabah, 2018). A survey conducted by Tow Center for Digital Journalism at Columbia University states that there are eleven companies that benefit from robotic journalism practices. The technology is used in the earthquake and murder news reports of the Los Angeles Times. Studies conducted to date show that news texts written by people are more readable, while texts produced by artificial intelligence are considered to be more reliable (Watry, 2016). Robotic journalism enables fast, accurate and complete news production which is the basic principle of journalism. The use of natural language creation programs makes news texts produced by artificial intelligence more understandable and readable.

Automatic journalism algorithms identify relevant data from databases and other data sources, and classify them by clearing raw data; these algorithms identify the key elements during the priority evaluation, comparison and collection of data; organizing a narrative within its semantic structure, distributes and publishes journalistic outcomes of textual, sometimes visual, content at various levels of style, language and grammar complexity (Montal & Reich, 2017: 832). Three minutes after the 2014 earthquake in California, the news appeared on the Los Angeles Times website. The news, which consisted of a very short and regular text, included the area affected by the earthquake, its magnitude and the time of its occurrence. At the end of the news text it is written that the news is generated by an algorithm. The technology in question is called Quakebot. The system works as follows: When a major earthquake occurs, the geological survey center Survey US Geological Survey sends an e-mail alert to the web server. Quakeboat then inserts the examined data into a previously prepared news text template. Finally, the news text is uploaded to the content management system (Rutkin, 2014).

Dr. Ludwig Maximilians University, Institute of Communication Sciences. According to Andreas Graefe, robotic journalism can be defined as the creation of news texts using readable data by machines. Today, this approach is mostly used in sports and financial news. Graefe states that the news content generated by robots is more reliable, indicating that the news content is shorter and that the texts often contain quantitative data (LMU, 2016).

In recent years, social media platforms have become very important in automatic content production and distribution through bots. Social bots are defined as various "automatic social actors (Lokot and Diakopoulos, 2016: 682). Through automated computer programs, human behavior can be imitated. Social bots communicate with users on many different social media platforms. Nearly 8.5 percent of Twitter accounts and approximately 7 percent of Facebook accounts may be generated automatically (Lokot and Diakopoulos, 2016: 683).

Today, the news produced by artificial intelligence is a small part of the total news. However, thanks to data journalism, statistics, computers and journalism are considered to be very close to each other. The type of journalism that is done in collaboration with these fields is called robotic journalism. In this type of journalism, news generated by the use of data sets are placed in previously generated news texts. Advanced natural generation language platforms; it converts data into text that is indistinguishable from the text that a human can write (Linden, 2017: 125). Robotic journalism is considered as a threat to the journalistic profession based on traditional journalism. The notion that journalism has disappeared is sought at least for the time being, not through automation, but in changing consumer behavior and media business models (Linden, 2017: 126).

It is thought that the news texts produced by the machines will change the professional qualifications of journalists. Similarly, technological innovations are expected to transform the processes of news gathering, making and distributing news. Therefore, it can be said that ordinary talents will decrease in importance in journalism profession in the near future. In this case, it is anticipated that journalists who can think more creatively and make deep analyzes in the media sector will be needed. As long as robotic journalism develops, it is possible that routine news is made by artificial intelligence rather than by people. The change process is expected to be more pronounced, especially in the areas of standard reporting of stereotypes. The point to consider here is whether journalism will turn into a mechanized form of writing prepared entirely by artificial intelligence. At this point, interesting, colorful and creativity-based news and journalists who make these news will come to the fore.

The development of journalism based on artificial intelligence reveals the concept of three-dimensional journalism. Virtual reality technology allows people to experience three-dimensional experiences as if they were in a non-real world. The technology in question is very popular in the gaming industry today with virtual reality glasses. With the virtual reality technology, it is possible to re-experience the real world in three dimensions. The use of three-dimensional photography technology with the concept of virtual reality, three-dimensional journalism can be done. Videos taken at multiple angles in places of news value or photos taken in three dimensions provide users with a virtual reality glasses experience. In addition, when street photographs are integrated with virtual reality glasses, strolling on any street or street around the world is considered a common occurrence. When this situation is evaluated in terms of journalism, it can be said that the news can be re-experienced and interpreted independently of the place where the news occurred.

The use of artificial intelligence in the journalism sector will bring about the digitalization of the journalism sector. With the use of the Internet in the media in the 1970s, the first steps were taken in the digitalization sector. The emergence of the concept of the Internet journalism can be cited as an example. When the circulation of daily newspapers is examined, it is observed that it has a decreasing course (Truth Share, 2017). This can be explained by the fact that the news is mostly followed on the websites of the newspapers or social platforms. It is possible that printed newspapers will disappear completely in the near future. It is envisaged that the news will be followed through any three-dimensional personal object. An object to be connected to the user's smartphone or computer will operate as a personalized newspaper an consisting of personalized news selected according to user habits. Objects need to be designed in a form that can be used in everyday life, but also in an attractive look. Therefore, it can be said that with the digitalization of the journalism sector, the concept of design will gain importance in the sector.

CONCLUSION

Today, research in the field of robotics technology is developing rapidly. This paves the way for opportunities that have never been experienced in daily life. Researchers from a wide range of fields, including social sciences, education and engineering, are working on new concepts that can be applied to human-based experiences in robot-human communications. When the development speed of robotics and artificial intelligence technology is taken into consideration, it is seen that the studies and applications in this field are limited. This may be due to the fact that the development is very rapid or the studies related to the field are not announced. It is considered that the direction of the development of artificial intelligence technology or the results of the studies on artificial intelligence cannot be predicted clearly.

Although the necessary information and resources on artificial intelligence are difficult to reach, the current practices in the journalism sector and the predictions about the applications to be seen in the near future are included. Because in the coming years, it is considered that new technologies will be needed in journalism enterprises and studies will be needed for how readers will meet these new technologies. With the digitalization of the sector, journalists will be replaced by robot journalists and their understanding of journalism will emerge.

When we look at the artificial intelligence applications in the journalism sector, there are several different examples. Artificial intelligence is utilized in the news that is made using

data that are instantaneously changed and meteorology, finance, stock market and weather. Compared to news texts written by man, it is seen that news texts prepared by artificial intelligence are more reliable. The reason for this is that the text contains more quantitative data and gives more accurate results. In addition, news can be re-experienced using virtual reality glasses. This type of journalism can be given as an example of three-dimensional journalism. It is thought that any personal item can be used as a newspaper or news source in the near future and three-dimensional journalism will develop. Intelligent systems that learn the habits and preferences of the user will transfer the news that will attract the attention of the person to the personal goods shown as examples. Thus, it is expected to see examples of personal journalism.

It is thought that artificial intelligence will have a very intensive use in the journalism sector in the near future. It is estimated that the biggest obstacle that restricts the studies on artificial intelligence arises from the unpredictability of the direction of the development of artificial intelligence. Because, if artificial intelligence technology is used correctly, it can make people's work much easier. However, it is thought that it may pose a danger to humanity beyond making it difficult otherwise. At this point, it is recommended to determine the effect of artificial intelligence for humanity as much as possible and to take measures or study accordingly.

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