

Research Article

Implementation of Artificial Intelligence in Governance: Potentials and Challenges

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Abstract. One industry that uses technology based on artificial intelligence in its operations is the government sector. Applying artificial intelligence in government settings can offer significant opportunities, but doing so comes with several obstacles that must be conquered first. Despite these obstacles, the application of AI in government settings can offer substantial possibilities. This article addresses the potential and challenges of integrating artificial intelligence in government and presents ideas to solve these challenges. The report also provides some background information on artificial intelligence. A qualitative technique combined with descriptive methodologies was used for this investigation. According to the findings of this investigation, the application of artificial intelligence in government settings carries with it a significant possibility of enhancing the quality of public services, improving the quality of decisions made, and enhancing the transparency and accountability of government operations. Nevertheless, some obstacles need to be conquered, such as concerns about protecting one's privacy and data, as well as worries regarding making decisions that are not fair.

Keywords: *Implementation, Artificial Intelligence, Governance, Public Service.*

A. INTRODUCTION

The term "artificial intelligence" (AI) refers to a type of technology that enables machines or computers to carry out tasks that traditionally have required human thought or intelligence. Some examples of these tasks include processing natural language, recognizing facial features, and making decisions. AI encompasses methods such as machine learning, deep learning, and neural networks, which enable machines to learn from data and produce increasingly accurate output as more and more data is processed. Devices can learn from data as they are fed into the system (Winston, 1984)

John McCarthy first introduced the concept of artificial intelligence at the Dartmouth Conference in 1956. McCarthy and his team proposed creating machines that could think like humans at that time. However, the development of artificial intelligence technology was initially limited due to limited technology and available resources (McCarthy, 2007). The development of computer technology and algorithms in the 1980s and 1990s allowed the development of artificial intelligence technology to be faster. Then in the 2000s, internet technology and smartphones brought artificial intelligence into everyday life. Artificial intelligence technology is increasingly sophisticated and applied to various fields, such as banking, health, manufacturing, and government.

Recent advances in deep learning technologies, natural language processing, and data analysis have provided new capabilities for artificial intelligence technologies. This technology is increasingly being developed and applied to autonomous vehicles, robotics, and IoT (Internet of Things). Technology companies such as Google, Microsoft, Amazon, and Apple have also

made heavy investments in artificial intelligence technology, and more and more startups are also developing AI products and services (Masih et al., 2021).

Artificial intelligence is a technology that enables machines or computers to perform tasks that require human thought or intelligence. This technology was first introduced at the Dartmouth Conference in 1956 and is growing along with advances in computer technology and algorithms. Artificial intelligence technology was growing and applied in various fields, with significant investments from technology companies and many startups developing AI products and services (Reis et al., 2019).

In the current era of disruption, demands on the government for public services are increasing. The government needs to pay attention to several important things to meet these demands. First, the government must ensure transparency and accountability in public services. This aims to ensure that public services are provided transparently and openly so that the public can monitor government performance. In addition, speed and efficiency in the provision of public services are also the demands of society in the era of disruption. The government needs to speed up providing public services, reduce unnecessary bureaucracy, and utilize the latest technologies, such as artificial intelligence, big data, and blockchain, to improve service efficiency and quality (Reis et al., 2019).

Another demand that is no less important is innovation. The government must continue to innovate in providing public services to respond to the challenges of the times. Applying the latest technology and innovative methods of providing public services can increase the effectiveness and quality of services. Furthermore, collaboration and community participation are also demands on the government for public services in the era of disruption. By involving the community in the process of providing public services, the government can understand the needs and expectations of the community for public services and increase public trust and participation in the process of providing public services (Valle-Cruz et al., 2019)

Equality and inclusion are also important things that the government must consider in providing public services. The government must ensure that all levels of society can access public services efficiently and fairly. This includes ensuring public services are available to everyone, including those in remote or disadvantaged areas. In order to meet these demands, the government must pay attention to these factors in providing quality public services that are responsive to changing times. Thus, it is hoped that the public services provided by the government can meet the community's needs and strengthen public trust in the government (Irawan, 2017).

Implementing artificial intelligence in government can be a solution for the government in meeting the demands of public services in the era of disruption. Artificial intelligence technology can speed up the process of providing public services, reduce bureaucracy, and improve service efficiency and quality. In this context, artificial intelligence can help the government to provide better, faster, and more responsive public services in changing times (Yasa et al., 2021).

In addition, artificial intelligence can also be used to increase transparency and accountability in providing public services. By utilizing artificial intelligence technology, the government can monitor the performance of public service provision in real time and provide more accurate and transparent data and information to the public (Henman, 2020).

In terms of innovation, artificial intelligence can also assist governments in developing more innovative and effective methods of providing public services. Artificial intelligence technology can assist governments in analyzing and understanding people's needs and expectations for public services and designing solutions that are more responsive to these needs. Artificial intelligence can also strengthen community collaboration and participation in providing public services. By utilizing artificial intelligence technology, the government can

develop applications and online platforms that allow the public to participate and provide feedback on the quality and effectiveness of public services (Mehr et al., 2017).

Artificial intelligence can assist the government in increasing equality and inclusion in the provision of public services. By utilizing artificial intelligence technology, the government can ensure that public services are available to everyone, including those in remote or underprivileged areas. In addition, artificial intelligence can also assist governments in understanding the needs and expectations of diverse communities and designing solutions that are more inclusive and sensitive to these needs (Saldanha et al., 2022)

Even the implementation of artificial intelligence in government can be an effective solution for the government in meeting the demands of public services in the era of disruption. However, there are still some obstacles to be faced at this time. The most significant obstacle is the limited human resources and budget. Implementing artificial intelligence requires experts who are skilled and experienced in developing artificial intelligence technology and a large budget. Human resources and a budget are needed for the government to implement artificial intelligence in public services (Pan et al., 2022). Data limitations is another obstacle to implementing artificial intelligence in government. The development of artificial intelligence technology requires accurate and extensive data so that the technology can provide optimal results. However, data limitations are a severe obstacle because the available data must still be more cohesive, structured, and complete (Gani et al., 2016).

Privacy and data security issues are essential in using artificial intelligence in government. The collection, storage, and processing of extensive data require guarantees that the data generated and used in the implementation of artificial intelligence is guaranteed confidentiality and is protected from cybersecurity threats. The government must ensure that the data used in implementing artificial intelligence is kept confidential and protected from cybersecurity threats (Ahmadi & Shybt, 2020). In addition, inadequate regulations and policies are obstacles to implementing artificial intelligence in government. Implementing artificial intelligence in government requires adequate regulations and policies to ensure the technology is used ethically and responsibly. There is still debate about regulating artificial intelligence in government, so more efforts are needed to make regulations and policies appropriate.

Based on the explanation above, the authors are interested in researching the Implementation of Artificial Intelligence in Government in terms of the potential and challenges that will be faced. From the results of this study, it is hoped that it can contribute to the scientific development of public administration, especially in the development of public services, and is expected to produce recommendation material for state administrators and stakeholders to strengthen and develop public services.

B. METHODS

This study employs a qualitative approach and descriptive methodologies. With the use of a qualitative research approach, it is hoped that researchers will be able to fully and thoroughly characterize the phenomena under study, as outlined in the research focus, so that they may ultimately solve the challenges that have been posed and therefore fulfill the research objectives (Moleong, 2014). In qualitative research, it is vital to establish study boundaries depending on the research problem's focal point. This is done to anticipate contradictions between research data, research difficulties, and research objectives and to restrict the problem's discussion so that it does not expand. According to (Creswell, 1994), a study must hone in on a single phenomenon or central idea to be investigated in depth.

The researcher as the primary instrument, triangulation (combined) data gathering, qualitative inductive data analysis, and a focus on meaning rather than generalization as the focus of qualitative research findings. In this study, the data will be examined descriptively,

which seeks to describe the research data in line with the studied foci without assessing the link between variables through hypothesis testing, as the authors did not formulate a hypothesis for this study. Besides conducting analysis, the research results will be translated and described qualitatively to obtain an overview of the situations or events that occurred in the field.

C. RESULTS AND DISCUSSION

1. Artificial intelligence

The term "artificial intelligence" (AI) refers to the intelligence demonstrated by a scientific entity. It is used interchangeably with the term "artificial intelligence," which refers to the intelligence implanted in a system that can be set or regulated. "The ability of a system to correctly read external input, to learn from that data, and to use that learning to fulfill particular goals and tasks through flexible adaptations," writes Kaplan and Haenlein (2019) to describe artificial intelligence.

Machines (computers) are given artificial intelligence to perform tasks that humans would generally do. Expert systems, video games, fuzzy logic, artificial neural networks, and robotics are just a few of the many applications of AI. Artificial intelligence (AI) is a statistical model used for decision-making by generalizing object features based on data placed in various electronic devices (Tarca et al., 2007).

Although the term "artificial intelligence" (AI) is sometimes associated with the fantastic, it is a significant subfield of computer science concerned with the development of autonomous intelligent devices capable of learning and adapting to their environment. Science in artificial intelligence focuses on developing robots and software capable of doing activities that would otherwise require human intelligence. A few examples are diagnostics, customer service, and the capacity to read handwriting, voice, and facial features. These study areas have evolved into distinct fields, each dedicated to addressing pressing societal issues. Several popular consumer computer and video game programs have already implemented AI systems. Their use rapidly expands across various industries, including business, medicine, engineering, the armed forces, and the hard sciences (Becue et al., 2021).

In addition to its function in assisting humans, the development of AI is assisted by the appearance of numerous science fiction films about AI. Hence the increased public interest in AI. Note that AI may not always refer to a virtual assistant. Nevertheless, AI is more expansive than that; it may be utilized in various ways by stressing machine intelligence that can produce human-like answers. Almost all computing gadgets and modern technology currently incorporate significant artificial intelligence. As previously said, AI can be experienced when utilizing Google's virtual assistant or Siri on a smartphone. AI is projected to progress and become more intelligent (Choudrie et al., 2023).

AI is a human intelligence simulation modeled after computers and programmed to think like humans. According to McLeod and Schell, artificial intelligence is the process of granting machines, such as computers, the ability to exhibit behaviors deemed as intelligent as if people exhibited them. In other words, AI is a computer system that can perform tasks that ordinarily require human strength or intelligence.

AI is a technology that, like humans, requires data to become knowledge. AI needs experience and data in order to improve its intelligence. Essential aspects of AI include learning, reasoning, and self-correction. AI must learn to expand its knowledge base. Humans do not necessarily direct AI's learning process, but AI will self-learn depending on its experience with human use.

The benefit of artificial intelligence over humans is that people can only play a game once. Meanwhile, AI can simulate multiple matches concurrently to expand the learning process and experience beyond human beings. In general, artificial intelligence can do one of

four tasks. These elements are Thinking humanly, a system that can think like humans; Acting humanly, a system that can act like a human. Reason is a system capable of reasonable thought; Act rationally, a system capable of rational action.

AI is applied in many industries, including industry, medicine, education, business, and daily life. Examples of AI applications that are commonly encountered in daily life.

- a. The Facebook with a Deeper Face. Facebook developed and owned DeepFace. In other words, this AI can identify persons in online photos. This artificial intelligence system eliminates the need to tag people in photographs manually. Remember that the AI must be taught about the data before determining whether the person in the photo is us. We collect this information when we tag people in images we have taken in the past and when we accept AI-generated photo tag suggestions. Later on, when AI has had plenty of training and data, it will be able to recognize a person in a photograph (Wang & Deng, 2021).
- b. Counsel on Electronic Commerce. E-commerce product recommendations are one of the most common uses of artificial intelligence. If you have ever bought on Shopee, Tokopedia, or any other countless e-commerce sites, you know that many of the items we buy end up being suggested to us. The product recommendation comes from something other than a source that thinks we will purchase the item. The suggested purchases are the ultimate result of some AI algorithm. Artificial intelligence can gather information about it whenever we interact with a product in any way—searching for it, buying it, or simply noticing it. This information will be mined using an AI-based system to recommend eligible purchases (Bawack et al., 2022).
- c. Digital Helper. The virtual assistant is the next generation of artificial intelligence, and many service providers are already in this space. We can talk to this virtual assistant like any other helper. As a bonus, virtual assistants can keep track of our schedules and alert us to relevant information when an upcoming appointment or event arrives. With voice commands, this AI may send and receive messages, play music, dim and brighten the lights, launch programs, and much more. The more we use this virtual assistant, the more we learn about ourselves and our preferences and habits (Chung & Lee, 2018).

2. Implementation of Artificial Intelligence in government

a. Health sector

Implementing artificial intelligence (AI) in the health sector can significantly improve the quality of health services and decision-making. AI can assist the government in analyzing and interpreting complex medical data from various sources, such as medical records, laboratory test results, and patient medication history (Ngiam & Khor, 2019).

One example of the application of AI to the government in the government health sector is in health policymaking. Governments can gain insights into public health trends, disease patterns, and certain health risk factors by continuously analyzing health data. This information can assist governments in formulating well-targeted and effective health policies to reduce the disease burden and improve overall public health. In addition, AI can also be used to support medical diagnoses. With fast and accurate analysis, AI can assist doctors in determining the initial diagnosis, choosing the proper treatment, and planning the next steps. In some cases, AI can even assist doctors in predicting the risk of disease in patients so that doctors can take appropriate precautions.

Not only that, but AI can also assist the government in optimizing the use of health resources such as medicines and medical personnel. Through AI, the government can optimize the use of these resources to get maximum benefits and increase the efficiency of the health system.

On the other hand, implementing AI in the government health sector can also help reduce health costs and speed up the treatment process. With fast and accurate analysis, AI can help doctors reduce medical costs and speed up the patient's healing process. AI can also assist patients in monitoring their health conditions and provide relevant information about their health so that they can take appropriate measures to maintain their health.

The implementation of artificial intelligence in the government health sector can have a significant positive impact on society. From data analysis to disease management, AI can help governments make more effective health policies, provide more accurate patient care, and optimize existing health resources. Therefore, applying AI in the government health sector is essential in improving the quality of health services and improving the health of society as a whole.

b. Education Sector

The application of artificial intelligence in government in the education sector has great potential to improve many aspects of education and enable students to achieve better results (AIDhaen, 2022). One of the main applications of AI in the education sector is adaptive learning systems. This system can help students study in a way that suits their abilities to achieve better results in less time. This system allows teachers to design more effective learning programs and make the necessary adjustments for different students.

AI can also assist in student evaluation and assessment more objective and structured way. With proper data analysis, AI can identify errors in student understanding and provide appropriate input for teachers to develop better learning strategies. AI can also assist in developing more relevant and enjoyable teaching materials, which can help students learn more effectively and engagingly.

Applications to learning systems, AI can also assist the government in developing more effective education programs and policies. The data collected and analyzed by AI can help governments better understand the educational challenges and needs in specific areas and design more effective programs to address those issues. AI can also assist in identifying patterns and trends in education management so that the government can take quicker and more appropriate actions.

Furthermore, AI can also be used to improve the efficiency of educational administration. By automating administrative tasks, such as data processing and reporting, teachers can have more time to focus on their students. It can also help the government make better decisions because more accurate and structured data can be obtained more easily. The application of artificial intelligence in the government education sector has great potential to improve many aspects of education. From developing adaptive learning systems to developing more effective education policies, AI can assist governments in increasing the effectiveness and efficiency of the education process. Therefore, applying AI in the government education sector is essential in improving education quality and helping create superior human resources.

c. Transportation Sector

The application of artificial intelligence in the transportation sector impacts vehicles and public transport infrastructure and services as a whole (Nikitas et al., 2020). One example of the application of AI in the transportation sector is the development of an intelligent parking management system. With an intelligent parking management system that uses AI technology, users can easily find available parking spaces near their desired location. This can reduce the time spent looking for available parking spaces, reduce congestion, and increase the efficiency of parking space use.

AI also reduces traffic congestion because CCTV cameras are installed on the roads to monitor traffic density. The footage from the surveillance cameras will be sent to the cloud and processed by data analysis and AI. The process carried out in the cloud generates information

to predict traffic jams. Officers can manage vehicle mobility effectively and efficiently. Manage the road when road closures, large-scale social restrictions, and accidents usually disrupt traffic, so it does not go smoothly. When congestion can be overcome, carbon emissions can also be overcome.

In addition to technology and infrastructure development, AI can also assist governments in developing sustainable transportation strategies. With the analysis of data on travel patterns and driver behavior, governments can develop transport policies and strategies that are more sustainable and environmentally friendly. This can help reduce greenhouse gas emissions, reduce air pollution, and create a more sustainable transport environment.

AI can also assist in the development of transport monitoring and surveillance systems. Using license plate recognition and facial recognition technologies, AI can assist governments in monitoring traffic and dealing with traffic violations effectively. This can improve traffic safety and help prevent crime on the highway.

AI and Automated mass transit are flexible solutions for transporting people below 50km/h along predefined and studied routes such as campuses, city centers, or suburban neighborhoods. The trial adoption of self-driving shuttles is expected to accelerate rapidly as the shuttle segment is less regulated than the automotive market.

The application of artificial intelligence in the government transportation sector has excellent potential to increase transportation efficiency, safety, and sustainability. From developing intelligent parking management systems to developing vehicle maintenance systems, AI can help governments improve transportation effectiveness and efficiency. Therefore, applying AI in the government transportation sector is essential in creating safer, more efficient, and sustainable transportation for people.

d. Security Sector

The application of artificial intelligence (AI) in the security sector has great potential to assist the government in preventing and dealing with criminal acts and security threats in the country (Wirtz et al., 2020). One example of the application of AI in the security sector is the development of monitoring and surveillance systems through CCTV cameras. Using facial recognition technology, AI can help monitor and identify suspicious individuals and alert security personnel. This can help prevent criminal activity and assist security personnel in dealing with situations.

Apart from that, AI can also be used in data analysis and security strategy development. Governments can develop more effective and efficient security strategies by analyzing crime patterns and security threats. This can help prevent crime and reduce crime rates in society. AI can also assist governments in monitoring and addressing cybersecurity. By using AI technology in data monitoring and analysis, governments can identify cybersecurity threats and prevent cyberattacks before they happen. This can help protect government data and information and improve cybersecurity in society.

The application of artificial intelligence in government in the security sector has excellent potential to improve security and reduce crime rates. From developing monitoring and surveillance systems to developing security strategies and cybersecurity monitoring, AI can help governments improve security effectiveness and efficiency. Therefore, applying AI in the government security sector is essential in creating a safer environment and avoiding crime and cybersecurity threats.

e. Tourism Sector

The application of artificial intelligence (AI) in government in the tourism sector can help improve the tourist experience and provide significant economic benefits ((Tussyadiah, 2020). One example of the application of AI in the tourism sector is the development of a sophisticated tourism information system. Using AI technology, the government can develop

a system that can provide more accurate and personalized information and recommendations for tourists, such as tourist attractions that suit their interests and preferences.

AI can be used in the development of tour booking and management systems. By using AI technology in tourism management, the government can optimize the availability of tourist attractions, determine the right price, and manage tourism capacity. This can help reduce queues and congestion at tourist attractions and enhance the tourist experience. Apart from technology development and tourism management, AI can also be used in data analysis and the development of tourism marketing strategies. By analyzing tourist interests and behavior data, the government can develop more effective and efficient marketing strategies to attract tourists from various countries. This can increase the number of tourist visits and provide significant economic benefits for the government and society.

Overall, the application of artificial intelligence in government in the tourism sector has great potential to enhance the tourist experience, optimize tourism management, and increase the economic benefits of tourism. From developing tourism information systems to developing marketing strategies, AI can assist governments in increasing the effectiveness and efficiency of the tourism sector. Therefore, applying AI in the government tourism sector is essential in enhancing the country's tourism potential and increasing benefits to society.

3. Potential and Challenges in the Implementation of Artificial Intelligence in Government

a. Potential Implementation of Artificial Intelligence in Government

The potential application of artificial intelligence in government includes increasing the efficiency and effectiveness of public services, facilitating the decision-making process, and increasing government transparency and accountability.

1). Improving the efficiency and effectiveness of public services

The application of artificial intelligence in government has excellent potential to increase the efficiency and effectiveness of public services. In terms of efficiency, artificial intelligence technology can speed up and simplify government administration processes. In addition, artificial intelligence technology can also assist the government in automating routine tasks performed by government employees, such as filing, preparing reports, and other administrative tasks. Automating these tasks is expected to increase the productivity of government employees and reduce operational costs.

In terms of effectiveness, artificial intelligence technology can assist the government in improving the quality of public services provided to the public. For example, applying artificial intelligence technology in decision-making can assist governments in evaluating policies and making better decisions. In addition, artificial intelligence technology can assist the government in monitoring and supervising the public programs and services provided to ensure that the public can access these services quickly and easily.

One example of its application is in the health sector. AI can speed up and improve the accuracy of disease diagnosis by processing patient medical data and providing appropriate treatment recommendations. For example, the China National Center for Cardiovascular Diseases uses AI to assist doctors in interpreting cardiac CT scan results and speeding up diagnosing coronary heart disease (Shu et al., 2021). In addition, AI can also be used to analyze geospatial data and map infectious diseases that occur in an area. This can assist the government in taking action to prevent and control infectious diseases.

In addition, AI can also be used in the education sector to increase efficiency and effectiveness in the learning process. AI can be used to analyze data on student learning outcomes and provide more personalized and practical teaching recommendations. For

example, Duolingo, a language learning platform, uses AI to provide more personalized study recommendations and help students accelerate learning (Teba, 2022).

Applying AI in the urban and environmental planning sector can also improve efficiency and effectiveness in public services. AI can be used to predict energy demand and provide more effective energy-saving solutions (Wang & Srinivasan, 2017). AI can improve efficiency and effectiveness in public services by leveraging AI's capabilities in processing data, conducting analysis, and providing solutions. The use of AI in the health, education, and urban and environmental planning sectors are some examples of the application of AI technology in increasing the efficiency and effectiveness of public services.

2). Facilitate In Decision Making

Artificial Intelligence (AI) can help governments make better and more effective decisions by leveraging AI's ability to analyze large and complex data. In making decisions, AI can be used to process data quickly and provide relevant information in a short time. In some cases, the data processed by AI can be much larger and more complex than what humans can process.

One of the main advantages of AI in decision-making is its ability to identify patterns and trends from data. In this case, AI can learn emerging patterns from past data and provide predictions about what might happen in the future. In some cases, AI can even identify invisible patterns in humans. This can assist the government in making better and more effective decisions in dealing with complex and unpredictable situations.

Examples of the application of AI in government decision-making can be seen in the security and defense sector. In this case, AI can predict national security threats by collecting and analyzing data from various sources, such as social media, intelligence, and geospatial data. In this case, AI can provide a complete picture of the national security situation and assist the government in making better and more effective decisions in dealing with security threats.

In addition, AI can also assist the government in making decisions related to natural resource management. AI can predict weather patterns and identify environmental risks associated with human activities. In this case, AI can provide recommendations for preserving the environment and assisting the government in making better and more sustainable decisions in managing natural resources.

3). Improving Government Transparency and Accountability

Applying artificial intelligence (AI) to the government can increase government transparency and accountability. AI can help identify problems, evaluate government performance, and monitor compliance with rules and regulations. In terms of transparency, AI can identify and analyze relevant data from different sources. For example, AI can analyze government financial reports to detect fraud or misuse of funds. In addition, AI can also assist in opening access to public information so that the public can better understand and monitor government activities.

In addition, AI can also increase government accountability. By leveraging AI, governments can make more informed and effective decisions in managing resources, delivering public services, and dealing with complex issues. Governments can utilize data processed by AI to make better policies that are more in line with the needs of society. In addition, AI can also assist governments in monitoring and evaluating their performance, so they can identify areas that need improvement and provide better solutions.

In this context, AI can help governments to be more transparent and accountable in their actions. Communities can better monitor and understand government decisions, so they can provide helpful feedback to improve government performance. In the long term, applying AI to the government can help build public trust in the government and strengthen democracy.

Therefore, implementing AI in government is essential to achieving better and more transparent governance.

b. Challenges of Implementing Artificial Intelligence in Government

There are several challenges in implementing artificial intelligence in government, such as privacy and data security issues and concerns regarding unfair decision-making. Here is the explanation:

1). Data Privacy and Security Issues

The challenge of implementing artificial intelligence in government that is important and must be considered is the issue of privacy and data security. In data processing by artificial intelligence technology, public, private, and confidential information can be exposed and misused by irresponsible parties. In some cases, artificial intelligence technology can lead to potential cyber crimes and identity theft that can harm society.

Apart from privacy issues, data security is also a fundamental issue in applying artificial intelligence technology in government. Data loss and breaches are also a severe threat to society and can undermine public trust in government. In addition, targeted cyber attacks on artificial intelligence systems can cause system failures and damage the technological infrastructure used.

To address this challenge, governments must ensure that data in artificial intelligence technologies are kept confidential and protected with adequate security measures. Data protection and privacy must be a top priority in applying artificial intelligence technology in government. In addition, there is a need for precise data security standards and high transparency in public data so that the public can have high confidence in the government's use of artificial intelligence technology.

Governments must also pay attention to cybersecurity risks in artificial intelligence systems and ensure that these systems are protected with adequate cybersecurity. This includes protection against targeted cyberattacks and protection against internal threats, such as unscrupulous employees. It is also necessary to have a data backup system that can be used in emergencies to recover data quickly in the event of data loss.

Data privacy and security are the main challenges in applying artificial intelligence technology in government. To overcome this challenge, the government must ensure that public data and privacy are guarded and protected with adequate security measures and establish clear data security standards and high transparency in artificial intelligence technology. This will ensure that data security and public privacy are maintained and that artificial intelligence technology can run smoothly and benefit the community.

2). Worries about unfair decision-making

Fair decision-making is one of the challenges of implementing artificial intelligence in government. Artificial intelligence technologies enable fast and effective decision-making, but often the algorithms used in these technologies are based on biased or unbalanced data. This can lead to unfair decision-making and harm society.

For example, in making decisions about the distribution of social assistance, artificial intelligence technology can speed up the process and ensure that social assistance is provided to people in need. However, the algorithms used in these technologies are unbalanced or based on partial data. In that case, social assistance may be provided unfairly, or people who need assistance may not receive it.

To address this challenge, governments must ensure that artificial intelligence technologies used in decision-making are based on balanced and fair data. The government must also ensure that the decision-making produced by this technology is accountable and transparent so that the public can understand and understand the reasons behind the decisions taken. Ensuring that trained and independent regulators supervise artificial intelligence

technologies used in decision-making is essential. Regulators must be able to monitor and evaluate the algorithms used in these technologies to ensure that the resulting decision is fair and balanced.

Fair decision-making is a fundamental challenge in implementing artificial intelligence technology in government. To overcome this challenge, the government must ensure that the artificial intelligence technology used in decision-making is based on balanced and fair data and that the resulting decision-making is accountable and transparent. Thus, artificial intelligence technology can benefit society and produce fair and balanced decisions.

D. CONCLUSION

In the current era of disruption, where technology is proliferating, implementing artificial intelligence in government is becoming increasingly important. The use of artificial intelligence technology can provide benefits to society and produce fair and balanced decisions. Therefore, it is necessary to have support from various parties, be it from the government, the technology industry, or society, to encourage the implementation of artificial intelligence that is appropriate and beneficial for all parties. Several conclusions can be drawn. First, artificial intelligence technology has excellent potential to increase the efficiency and effectiveness of public services in government, especially in decision-making, and to improve public services. Second, there are several challenges in implementing artificial intelligence in government, such as data privacy and security issues, fair decision-making, and the need for more supporting regulations and policies. To overcome these challenges, the government must ensure that the artificial intelligence technology used in government is based on balanced and fair data and that the resulting decision-making is accountable and transparent. Governments must also ensure that independent and trained regulators supervise artificial intelligence technology.

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