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ROLE OF INFORMATION TECHNOLOGY IN IMPROVING THE EFFICIENCE OF THE NATIONAL ADMINISTRATION

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Abstract

The study aims to analyze the role of information technology in improving the efficiency of state administration. The research method used is the study of literature, where sources of information such as articles, journals, books, and publications related to the subject are analyzed and synthesized. Research results show that information technology has a positive impact in improving state administration processes, through automation, business process simplification, improved accessibility, efficient data management, and better interdepartmental collaboration.

Keywords: Role, Information Technology, Efficiency, State Administration.

Introduction

State administration refers to the academic discipline and field of practice in studying the three essential elements of the life of a country, namely government, business, and society. (Hildawati et al., 2024). State administration is also known as public administration. The objective of the State administration is to efficiency and efficiency in the management of public resources, as well as to provide quality public services to the public. (Tampubolon et al., 2024). Therefore, in implementing information technology in public service, it is important to ensure data security, user privacy, accessibility for all layers of society, and training for public service officials to manage the system properly. With the right use of information technology, public services can be more efficient, transparent, and responsive to the needs of society. (Soimin, S. 2024).

The state administration has functions to perform, such as planning, organizing, monitoring, and evaluating public policies. State administration also covers the management of the administrative scope of government, such as financial administration, personnel administration, and general administration. (Prihastuti, D. 2024).

The importance of state administration in the context of efficiency and effectiveness of government has prompted the use of information technology to improve the performance of government administration. Information technology enables manual process automation, better

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data management and analysis, as well as improved communication and collaboration between departments and government agencies. (Farziah, P. B. H., & Safinka, R. I. 2024).

Good administration requires effective information management. Information technology enables the collection, storage, processing, and use of information in a systematic and structured manner. With information technology, data and information can be easily and quickly accessed, and processed for better decision-making. (Yost, B., & Weston, S. 2024).

The use of technology can also improve the quality and accessibility of services provided in the administration. For example, a public service that uses a website, a mobile application, or an online system for filing or managing applications. It makes it easier for the public to interact with the government or other administrative institutions. (Baranyanan et al., 2024).

In order to improve the efficiency of state administration, there are a number of issues and challenges that need to be addressed, such as the integration of complex information systems, data security, and the competence of human resources in adopting and managing information technology. However, with the right arrangements and strong commitments, information technology has great potential in improving the effectiveness of the state administration and providing better public services to the public. Nevertheless, the challenges faced by governments in achieving better administrative efficiency are complex and diverse. Nowadays, information technology is becoming an increasingly popular solution for improving the efficiency of government administration. (Cantens, T. 2024).

Information technology not only reduces the administrative burden with manual process automation, but also improves coordination and collaboration between departments and government agencies. Data can be better managed and processed for informed decision-making, and communication between government and society becomes more effective.

In addition, the use of information technology in the management of state administration can provide various benefits in achieving efficiency and effectiveness. The benefits are also varied, such as employment management systems, planning and budgeting systems, public service systems, e-procurement systems, geographic information systems (GIS) and other benefits. However, the use of information technology in the management of state administration also faces challenges, such as data security, regulatory compatibility, and the availability of adequate information technology infrastructure. Therefore, cooperation is needed between governments, the private sector, and the public in applying information technology effectively and addressing existing challenges. (Cantens, T. 2024; Giest, S. N., & Klievink, B. 2024).

In this study, we will explore the role of information technology in improving the efficiency of state administration and provide concrete examples. We will also identify challenges and considerations in the implementation of information technologies in government administration, and will provide insights for future directions and opportunities. This research will make an important contribution to clarifying the benefits of information technology for the efficiency of government administration to readers who are interested and engaged in government administration or information technology.

Research Method

Literary research method is a research approach that uses analysis and synthesis of a set of relevant literary sources to answer research questions or gain a better understanding of a topic. In this method, the researcher collects, analyzes, and synthesizes various sources of literature related to the problem or purpose of the research to be studied. (Punch, 2013; Adhabi & Anozie, 2017).

Literary research methods often start with searching for relevant keywords in catalogues, indexes, or search engines, such as Google Scholar or digital libraries. After that, the researchers selected the sources most relevant to the purpose of the research, and then analyzed and synthesized the findings from the selected literature. (Zed, 2004).

The advantages of literary research methods are that they can provide an in-depth understanding of the topics studied, identify and compile various relevant literary sources, as well as identify gaps in existing knowledge. However, this method also has weaknesses, such as limited access to sources of literature in foreign languages, as well as the possibility of bias by researchers in the selection and interpretation of the literature used. (Reay, 2014; Graue, 2015).

Result and Discussion

Definition and Scope of Information Technology

Initially, information technology was in ancient times when humans exchanged information using language as the primary form of communication. However, this form of communications did not last long, because information would be forgotten once the conversation ended. Over time, various tools and systems have been developed to help in communication and support everyday activities (Norman, J. M. (Ed.).

With modern technology, the field of information technology has seen significant progress. From the development of early computing machines in the mid-20th century to the creation of very powerful computers and networks, information technology has revolutionized the way we store, process, and transmit data. (Buckland, M. K., & Liu, Z. 1995).

The history of information technology is marked by important historical milestones such as the invention of telegraph, telephone, and radio. These discoveries open the way for the creation of more complex systems and devices such as computers, the Internet, and mobile phones. This adult, information technology plays an important role in a variety of industries and sectors, enabling efficient data management, communication, and process automation. (Campbell-Kelly et al., 2023).

Information technology (IT) is a term used to describe the use of hardware, software, networks, and other technological resources to collect, manage, process, store, and disseminate information. In this context, information technology focuses on the processing and exchange of information through computers and communication networks. (Laakso, M., & Kiviniemi, A. O. 2012).

Information technology is a discipline that involves the use of technology in addressing information-related issues, including data processing, text-processing, communication, database maintenance, and information security. Information technology systems and applications are used to support various aspects of everyday life, including business, government, education, health, entertainment, and more.

In a business environment, information technology can help improve operational efficiency, improve employee productivity, optimize supply chain management, improve customer service, and improve product quality. In the government sector, information technology is used to provide better public services, improve administrative efficiency, increase transparency, and support data-based decision-making. (Schlagwein et al., 2017).

In general, information technology serves to facilitate the processing, storage, retrieval, and dissemination of information efficiently, securely, and reliably. IT has become an integral part of everyday life, with its applications and impact seen in a wide range of sectors, including business, government, education, health, entertainment, and others. (Froehlich, T. 2004).

In general, information technology consists of: 1) Computers: Computers are the hardware used to process and store data. Computers can be in the form of desktops, laptops, tablets, or smartphones. 2) Software: Software (software) are programs and applications installed on computers to assist in data processing and perform certain tasks. Examples are operating systems (Windows, macOS, Linux), office applications (Microsoft Office, Google Suite), graphic design applications (Adobe Photoshop, CorelDRAW), and so on. 3) Networks and the Internet: Communication networks like the Internet enable access and exchange of information globally. Through the network and the internet, we can send emails, browse the web, conduct teleconferences, share files and data, and communicate with others around the world. 4) Database: Database is a systematically organized data storage place. Databases are used to manage and store information efficiently, such as a database management system such as Oracle, MySQL, SQL Server, and others. 5) Mobile technology: Mobile technology allows access to information and communications through mobile devices, such as smartphones and tablets. Mobile applications, like social media, games, digital banking, and more, have become an important part of everyday life. (Turban et al., 2001; Martin et al., 2005).

In business, IT is used to improve operational efficiency, improve the quality of products and services, expand markets, and enable collaboration between individuals and organizations. (Kraemer, K. L., & King, J. L. 2003). In government, IT can be used to provide better public services, increase transparency, improve administrative efficiency, and develop data-based policies. (Schelin, S. H. 2007).

Information technology has also played a significant role in government operations and administrative processes. The use of information technology in government can improve operational efficiency, provide better public services, and increase transparency in decision-making. The application of advanced information and communication technology in public administration has enabled significant changes in the collection, processing, and exchange of information. This can improve efficiency and transparency of administrative procedures as well as accelerate decision making. In the digital age, the transformation of public administration with the use of information technology is becoming crucial. The positive impact of digital transformation in public administration discusses how the utilization of technology can improve the efficiency and accessibility of public services. Using information technology in government can also enable open government, which involves the use of information and communication technology (ICT) to support public services, government administration, democratic processes, and relations between citizens. (Cheng, Z., & Zeng, M. 2024; Zhang, K., & Bu, C. 2024).

Information Technology Benefits in Administrative Efficiency

Information Technology (IT) has a wide range of benefits for individuals,, and societies. Some of the main advantages of information technology include: 1) Facilitating access to information: Information technology allows easy and fast access to a variety of information sources. With the Internet, people can search and get the information they need with just a few clicks. 2) Increasing Efficiency and Productivity: The use of information technology can improve efficiency and productivity in various aspects of life. In business, the use of computer devices and applications can help automate processes, save time, and improve work efficiency. 3) Facilitating Communication: Information Technology has revolutionized the way humans communicate. Through email, instant messaging, social media, and teleconferencing, people can communicate easily and quickly with individuals or groups in different geographical locations. 4) Facilitating e-commerce: Information technology has driven the development of electronic commerce or e- commerce. E-commerce allows people to shop online, make electronic payments, and sell products or services without geographical restrictions. 5) Improving Quality of Life: Information Technology provides many benefits in improving quality of life. For example, the use of medical devices and IT-based health applications can help in the diagnosis and treatment of diseases. In education, IT also enables distance learning, online learning, and access to broader learning resources. 6) Enhance Collaboration: Information Technology facilitates collaboration between individuals and teams. Through various collaboration tools such as file-sharing apps and online collaboration platforms, individuals can work together and share information without geographical constraints. 7) Boost Innovation: Information Technology becomes a driver of innovation in a variety of fields such as technology, business, and social. With IT, people can develop new applications, new services, and optimize existing business processes (Ogunode, N. J., & Garba, A. D. 2024; Ngah et al., 2024) Overall, Information Technology has made a major contribution to social, economic, and cultural transformation as well as improving human lives in various aspects, including in terms of administrative efficiency.

The application of information technology in administration can provide a variety of benefits in improving efficiency. Here are some ways in which technology can improve administrative efficiency: 1) Routine Task Automation: Information technology allows the automation of routine administrative tasks such as data processing, inventory management, and reporting. By automating these tasks, human time and resources can be allocated to more complex and strategic tasks. 2) Electronic Document Management: Using an electronic document management system (EDMS) enables more efficient document management and search. Documents can be stored in digital format, easily accessible, and searched quickly using specific keywords or metadata. 3) Collaboration and Information Sharing: Technology allows administrative teams to collaborate efficiently with online collaboration tools. Using shared platforms and online communication tools facilitates real-time information exchange and reduces reliance on communication through letters or face-to-face meetings. 4) Asset Management System: With a technology-supported asset management system, administrations can effectively track, monitor, and manage organizational assets such as equipment, software, and inventory. This allows for optimized use of assets and long-term cost savings. 5) Improved Customer Service: Implementing technology in administration can help improve customer

service. With support for customer relationship management (CRM) systems and technology-based customer service such as Chatbot Adoption, organizations can deliver faster, more accurate, and more responsive services to their customers. 6) Project and Schedule Management: With the help of project management software, administrations can manage projects and schedules more efficiently. The software allows task logging, resource allocation, progress monitoring, and schedule planning easily (Danziger, J. N., & Andersen, K. V. 2002; Sudrajat et al., 2024).

By optimizing the application of Information Technology in administration, efficiency can be improved, costs can be reduced, and time can be optimized. This will provide significant benefits for organizations in managing their operations more efficiently and effectively.

Besides, the impact of information technology in reducing manual tasks and automation of administrative processes is very significant. Intelligent automation technologies, such as RPA (Robotic Process Automation), are becoming smarter in learning complex tasks and use cases independently. Business process automation reduces manual workloads and simplifies existing workflows. This automation increases operational efficiency by simplifying data entry, financial recording, and other administrative tasks. (Hofmann et al., 2020).

The application of advanced information and communication technology in public administration has brought significant changes in the collection, processing, and exchange of information. It has increased efficiency, transparency in administrative processes, and faster decision-making. Digital transformation, which involves the integration of technology into all aspects of an organization, including business processes, corporate culture, and interaction with customers and business partners, plays an important role in reducing manual workload and automation of administrative processes. (Ribeiro et al., 2021).

Implementation of automation systems in administration has been proven to improve efficiency and efficiency in the organization. By reducing manual tasks, technology enables organizations to their goals effectively and efficiently. These technological advances have a major impact in reducing manuals and automating administrative processes, thereby improving efficiency and improving workflows.

Challenges and Considerations

The application of information technology in government administration also has challenges and obstacles to overcome. Some of the potential challenges and obstacles in implementing information technology in government administration include: 1) Budgetary constraints: The application of information technology often requires significant investments. 2) Limited infrastructure: Some areas may face infrastructure constraints, such as slow internet connections or lack of information technology accessibility. This could complicate the implementation of information technology in government administrations in these areas. 3) Lack of Skills and Human Resources: The application of information technology requires specialized skills and expertise in administration and technology. The lack of skill and trained human resources can be a challenge in managing and using information technology effectively. 4) Data Security and Privacy: In government administration, data security and privacy are becoming crucial. Protecting sensitive data and citizens' privacy is a significant challenge in the application of information technology. 5) Cultural Change and Governance Change: The

application of information technology often requires cultural and governance changes within government organizations. This can affect previously embedded working habits and requires efforts to adopt new changes. 7) Vendor dependence and dependence: Governments need to choose reliable technology vendors to build and manage their information technology systems. However, excessive dependence on specific vendors can be a challenge if there is no competition or flexibility in changing vendors if necessary. 8) Regulations and Policies: There are many regulations and policies related to the use of information technology in government administration. Adapting to applicable regulations and ensuring compliance with ethical and privacy standards can be challenging in the application of information technology (Scavo, C., & Shi, Y. 2000; Signore et al., 2005).

Governments can address these challenges by adopting a holistic and strategic approach that involves a spirit of collaboration and participation. A joint effort is needed between governments, regulators, and the public to identify, analyse, and address these challenges through adequate regulation, clear privacy policies, appropriate investments, and effective communication to the public about the benefits and security measures taken in the application of information technology in government administration.

Directions and Opportunities in the Future

Efficiency of government administration is an attempt to carry out administrative actions with minimal cost, time, and resources, whileining government objectives well. Continuing to monitor and evaluate performance and seeking opportunities for improvement will ensure that efficiency targets continue to be achieved and provide significant benefits to public service and government performance as a whole (Pang et al., 2004).

There are several new trends and technologies that can improve administrative efficiency in government, among them; 1) Business process automation: Business Process Automation technology can replace manual tasks with more efficient automation. This can increase productivity and reduce the risk of human error. Examples of business process automation technologies are robotic process automations (RPAs) that can perform routine and repetitive tasks automatically. 2) Cloud computing: cloud computing services enable governments to store, manage, and access data securely over the Internet. This can reduce the cost of IT infrastructure and enable faster and more efficient data processing. 3) Big Data and Analytics: Using big data and analytics can help governments analyze big and complex data quickly and efficiently. Thus, better decisions can be made based on solid evidence and data. Examples of the use of big data & analytics in government administration are improved capabilities in monitoring and managing public health, improved efficiency in public services, and identification of trends and patterns of behaviour of citizens. 4) Artificial Intelligence: Artificial intelligence technology can help in optimizing government administration processes. Examples of use of artificial intelligence in government administration include chatbots and virtual assistants that can provide support and answers to general public questions, faster and more accurate data analysis, and risk management on government policies or programmes. 5) Blockchain: Blockchain technology can be used to improve transparency, security, and data integrity in government administrations. By using blockchain, transaction records can be recorded and verified decentralizedly, eliminating the need for third parties to verify and control

data. 6) Blockchain Technology: blockchain technologies can be utilized to enhance transparency and security of data in government administration. 7) Internet of Things (IoT): Connecting devices and infrastructure through the Internet in the Internet of things (IOT) can improve efficiency and optimize operations in various sectors of government administration, such as environmental monitoring, infrastructure management, and traffic monitoring. 8) Biometric technology: The use of biometric technologies, such as fingerprints, retina scanning, or facial recognition, can improve security and reduce the risk of identity fraud in government administrations, such As identification and population registration, border security, and confidentiality management. (Novachenko et al., 2020; Sung, N. 2007).

The implementation of these new trends and technologies can help improve efficiency, transparency, and service in government administration. It is important to plan and implement them properly, as well as to ensure compatibility with applicable policies, regulations, privacy, and security.

Conclusion

The role of information technology in improving the efficiency of state administration can be explained in some of the following conclusions: 1) Process Automation: By adopting information technology, the state administration can automate routine and recurring administrative tasks. It reduces dependence on manual tasks, increases productivity, and reduces the potential for human error. 2) Business Process Simplification: Information technology enables business processes to be simplified through improvements and improvements to existing systems. By updating outdated systems with the latest technology, the state administration can improve operational efficiency and reduce the time required to complete administrative tasks. 3) Increased Accessibility: Information technology also allows for better accessibility in the state administration. Governments can provide an electronic platform, such as an e-Government portal, to enable people to access critical services and information quickly and easily. This saves time and cost in interacting with governments. 4) Efficient Data Management: By using information technology, the state administration can improve efficient data management. The use of centralized databases and integrated information systems enables easier data access, accurate data management, and better decision-making based on relevant data. 5) Better collaboration: Information technology facilitates better collaboration and communication between departments and government agencies. Cloud-based platforms and online collaboration tools enable real-time information sharing, teamwork, and project monitoring. It accelerates workflows and increases efficiency in the state administration.

Overall, the use of information technology in the state administration has great potential for improving efficiency, reducing bureaucracy, and improving the accessibility of public services. However, it should be remembered that the adoption of information technology must be balanced with appropriate security and privacy policies, as well as adequate training for government staff to be able to make good use of this technology.

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