

PUBLIC SECTOR TRANSFORMATION: INCREASED EFFICIENCY AND INNOVATION IN THE DIGITAL ECONOMY

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Abstract

Public sector transformation is a must in responding to new challenges and taking advantage of opportunities that arise in the digital economy era. The aim of this study is to understand the role of efficiency and innovation in public sector transformation, as well as its impact on public performance and services. The research background covers the ever-evolving global dynamics, where advances in digital technology have fundamentally changed the economic landscape, encouraging the public sector to improve efficiency, responsiveness, and innovation in providing public services to society. The research methods used include literature studies, secondary data analysis, and direct surveys to stakeholders related to public sector transformation. The results show that a large number of government agencies have adopted digital technology as part of their transformation efforts. However, there are still significant challenges associated with the digital divide and lack of technological skills among bureaucracy. It also found that innovation and collaboration across sectors play an important role in designing holistic and effective solutions. The result of this study is that the transformation of the public sector towards increased efficiency and innovation has a significant impact on public performance and services. Digital technology adoption, technology skills development, innovation promotion, and cross-sector collaboration are key in achieving transformation goals. By combining these efforts, the public sector can create

significant added value for society and position themselves for long-term success in the ever-changing era of the digital economy.

Keywords: Transformation, Public Sector, Innovation, Digital Economy

INTRODUCTION

To improve the effectiveness and efficiency of government organizations in providing services to the public, a focus on implementing effective strategies is essential. This requires careful and strategic thinking from each organization, ensuring that inputs are translated into the right strategy and the necessary foundations have been laid for its implementation. By implementing optimal management practices, public sector organizations can strive to achieve their vision and mission (Haliah et al., 2024). Amid evolving global dynamics, public sector transformation is becoming increasingly urgent in response to the world's rapidly changing and growing complexity. Advances in digital technology have created a new paradigm in the global economy, changing the way we work, communicate, and access information. As a result, the public sector faces enormous pressure to adapt to these changes and leverage them to improve their performance. In an era of digital economy characterized by accelerated innovation and transformation, the public sector must focus on improving operational efficiency, responsiveness to the changing needs of society, and the creation of new services that are more effective and innovative. Not only that, but the public sector must also be able to address new challenges such as data security, privacy, and digital inclusion to ensure that the benefits of this transformation are equitable and accessible to all people. By adopting digital technologies wisely and developing appropriate strategies, the public sector has great potential to improve people's quality of life, promote sustainable economic growth, and strengthen institutional foundations to face an increasingly complex future (Benbunan-Fich et al., 2020).

Increasing efficiency is a crucial goal in public sector transformation efforts. In the face of increasingly complex service challenges and limited resources, governments around the world are faced with pressure to maximize results with existing budgets. Optimizing the use of budget and human resources is an imperative to ensure that public services can be provided effectively and equitably to the community. In this context, digital technology is

the main catalyst in improving the efficiency of the public sector. Automation of administrative and operational processes allows for significant time and cost savings, freeing up human resources to focus on more strategic and value-added tasks. For example, the implementation of an integrated data management system can eliminate redundancy, speed up decision-making, and improve the accuracy of information provided by governments to the public (Lombi et al., 2022).

In addition, more effective use of data is key in optimizing public sector performance. By collecting, analyzing, and utilizing data intelligently, governments can gain deeper insights into people's needs and preferences, enabling them to design more targeted and efficient policies and programs. The development of a more integrated system is also an important step in improving the efficiency of the public sector. By connecting various government units and agencies, both at the local, regional, and national levels, system integration can reduce information silos and improve coordination between agencies, thereby facilitating the provision of more holistic and sustainable services to communities. By implementing these digital technology solutions, the public sector can achieve higher efficiency in service delivery, reduce unnecessary bureaucracy, and improve overall societal satisfaction. Thus, the transformation of the public sector becomes more adaptive and responsive to the demands of the times, while still maintaining the financially responsible use of resources (Lv et al., 2021).

In addition, the role of innovation is very important in responding to various new challenges that arise, including but not limited to climate change, social inequality, and global economic uncertainty. The public sector must adopt a proactive stance in addressing these challenges by creating innovative and sustainable policies and programs. Innovation enables the public sector to find new approaches and creative solutions that address the complexity of these problems. For example, in the face of climate change, innovation can drive the development of renewable energy, improve energy efficiency, and reduce carbon footprint. To address social inequality, innovation can boost social infrastructure development, improve access to health and education services, and create economic opportunities for vulnerable groups (Archmann & Iglesias, 2010).

The importance of a collaborative approach should also not be overlooked. Collaboration between government, the private sector, academia, and civil society enables the exchange of knowledge, resources, and experience needed to design and implement

holistic and effective solutions. Through strong partnerships, the public sector can leverage existing expertise and capacity outside government to increase the impact of the policies and programs they implement. By adopting this innovative and collaborative approach, the public sector can strengthen its ability to address the complex and dynamic challenges of the modern era. Through concerted, coordinated efforts, governments can be effective agents of change in promoting sustainable and inclusive development, as well as improving the overall well-being of society (Scholl, H.J.; Glassey, O; Janssen, 2016).

However, public sector transformation has not gone smoothly without obstacles. One of the main challenges faced is the equitable adoption of digital technology across government agencies. Although some countries have taken a step forward in this regard, many still face a significant digital divide and lack of technological skills among bureaucracy. This gap can hamper governments' ability to harness the full potential of digital transformation, slow down decision-making processes, and reduce operational efficiency. In addition, cultural and mindset changes are also obstacles in the transformation of the public sector. Bureaucracies that tend to stick to conventional practices and are resistant to change are often a major barrier to innovation. To overcome these barriers, efforts are needed to promote a culture that is open to change, strengthen adaptation skills, and encourage collaboration across departments and agencies (Datta et al., 2020).

In the face of these challenges, it is important for governments to take strategic steps to support equitable adoption of digital technologies and strengthen institutional capacity to innovate. This could include investments in technology training for government staff, the development of resilient technology infrastructure, and improved accessibility of digital services to the public. In addition, bold policy reforms are also needed to create an environment that supports innovation and digital transformation. This could include regulatory reforms, incentives for private investment in innovative solutions, and increased transparency and public participation in decision-making processes. By overcoming these barriers, the public sector can accelerate the pace of their digital transformation and improve the quality and affordability of public services. Thus, public sector transformation can be more inclusive, responsive, and effective in meeting the needs of society in this digital era (Scupola & Zanfei, 2016).

Understanding this backdrop, it is important for governments to take strategic steps in designing and implementing public sector transformation. Increasing efficiency, responsiveness, and innovation is a key foothold in this process. First of all, governments need to focus on improving efficiency in the use of resources, including budgets and labor, to ensure that every investment made has maximum impact. Process automation, the use of technology to optimize administrative processes, and the reduction of unnecessary bureaucracy are key steps in improving this efficiency. Responsiveness is also an important aspect in public sector transformation. Governments must be able to quickly respond to changes in people's needs and demands, whether in the provision of public services, crisis management, or in the face of new challenges that arise. This requires flexible and adaptive systems, as well as open communication between government and society. In addition, innovation must be considered as the main motor in the transformation of the public sector. Governments must create an environment that encourages innovation at all levels, from supportive policies to support for research and development. Investments in new technologies, policy experimentation, and partnerships with the private sector and academia can help drive new solutions that are more effective and efficient in meeting societal needs (Lotsis *et al.*, 2024).

By improving efficiency, responsiveness, and innovation, the public sector can play a more effective role in promoting inclusive and sustainable economic growth. Through the provision of quality public services, community empowerment, and the creation of an environment conducive to business and investment, the government can create a solid foundation for economic progress and the overall welfare of society. Public sector transformation is not just an end goal, but a means to achieve the government's broader vision of creating a just, dynamic, and sustainable society.

METHODS

Field research on public sector transformation to improve efficiency and innovation in the digital economy era involves a structured and comprehensive set of steps (Sugiyono, 2018). The first step is the identification of study cases representing various contexts of public sector transformation in different countries or regions. After that, primary data were collected through direct observation, interviews, and questionnaires addressed to key stakeholders involved in the transformation process. Through direct

observation, researchers can gain first-hand insight into the practices used and the challenges faced in efforts to improve efficiency and innovation. Meanwhile, in-depth interviews with government officials, transformation project leaders, and other stakeholders help in understanding their views, experiences, and perceptions of the public sector transformation process. In addition, questionnaires were also distributed to a wider sample of relevant stakeholders to collect data quantitatively on perceptions and expectations for the transformation. The collected data is then analyzed qualitatively and/or quantitatively to identify patterns, trends, and important findings emerging from field data. The results of this analysis are then validated through a triangulation process to ensure the reliability and validity of the research findings. With this approach, this field research is expected to provide a deep understanding of public sector transformation in the digital economy era and make valuable contributions to policymakers and public sector practitioners in improving efficiency and innovation in public service delivery .

RESULTS

Here are some research data on Public Sector Transformation for Increased Efficiency and Innovation in the Digital Economy Era:

Table 1. research results on Public Sector Transformation for Increased Efficiency and Innovation in the Digital Economy Era:

No.	Category	Percentage/Value	Information
1.	Digital Technology Adoption Rate	Government agencies: 75% Utilization of digital technology in public sector operations (Scale 1-10): 6.8	Percentage of government agencies that have adopted digital technology. Digital technology utilization rate in public sector operations (Scale 1-10)
2	The Challenge of Digital Equality	Bureaucracy: 45% Digital divide between government agencies (Scale 1-10): 5.2	The percentage of bureaucracy that has limitations in technology access and skills. Level of digital divide between government agencies (Scale 1-10)
3	Cultural and Mindset Change	Government Leader 60% Technology Skills Training Budget: IDR 2.67 trillion	Percentage of government leaders who support cultural change and mindset. The amount of budget allocated

			for technology skills training
4	Collaboration and Partnership	Public sector transformation projects with cross-sector capability: 80% Stakeholder satisfaction with cross-sector collaboration (Scale 1-10): 7.5	Percentage of public sector transformation projects involving cross-sector partnerships. Level of stakeholder satisfaction with cross-sector collaboration (Scale 1-10).
5	Advantages of Innovation	Society: 85% Decrease in operational costs: 77.55%	The percentage of people who feel helped by innovation in public services. Decreased operational costs as a result of innovation.

Source: Author Analysis

Digital Technology Adoption Rate

The results show that as many as 75% of government agencies have taken steps to adopt digital technology as an integral part of their public sector transformation efforts. Despite this, data shows that the level of utilization of digital technology in public sector operations is still not reaching its maximum potential. The average score given by respondents regarding the utilization rate of digital technology was 6.8 on a scale of 1-10. Although this score indicates that there is a relatively good adoption rate, there is still room for efficiency improvement in the use of technology. These findings underscore the importance of not only adopting digital technologies, but also ensuring that they are optimally utilized in all aspects of public sector operations. Additional steps may be needed to improve understanding, skills, and infrastructure that supports the use of digital technologies at different levels of government. Thus, increasing efficiency in the use of digital technology can be one of the key steps in optimizing public sector performance towards the digital economy era (Polyakov & Kovshun, 2021).

Digital Equality Challenges

The research found that the challenge of digital equality is one of the significant obstacles to public sector transformation. Data shows that 45% of bureaucracies face limitations in technology access and skills. This creates a digital divide that has the potential to slow down the overall public sector transformation process. The average score for the

level of digital divide between government agencies is 5.2 on a scale of 1-10. This score highlights the importance of further efforts in expanding access and improving technology skills among bureaucracy.

To overcome this digital divide, a holistic and sustainable approach is needed. Possible measures include technology skills training for government employees, development of adequate technology infrastructure, and provision of easier access to resources and training in technology. In addition, an inclusive and community-based approach is also important to ensure that all levels of society, including those with limited access and skills, can benefit from the transformation of the public sector towards the digital economy era. By addressing these digital equity challenges, the public sector can ensure that all stakeholders have equal access to digital technology services and benefits. This will accelerate the process of public sector transformation and increase the effectiveness and responsiveness of the government in meeting the needs of the community more efficiently in the era of digital economy.

Cultural and Mindset Change

Research shows that most government leaders understand the importance of changing culture and mindset as integral to the public sector's transformation towards the digital economy. About 60% of them actively support these efforts. Awareness of the need for cultural change and mindset reflects an understanding that technological transformation is not just about adopting new devices and systems, but also changing the way we think and work. In addition to verbal support, this commitment to transformation is also reflected in significant budget allocations. The findings showed that the amount of budget allocated for technology skills training reached Rp2.67 trillion. This figure indicates a real commitment to addressing the challenges of digital equality and improving technology skills among bureaucracy.

The high support and budget allocation for technology skills training shows that governments understand that the key to successful public sector transformation lies not only in the technology itself, but also in the ability of humans to master and integrate the technology into their daily work. Thus, these measures are a strong foundation to ensure that public sector transformation can proceed smoothly and sustainably in the era of digital economy.

Collaboration and Partnership

The research findings illustrate that cross-sector collaboration has become an important pillar in the transformation of the public sector towards the digital economy era. Data shows that as many as 80% of public sector transformation projects involve cross-sector partnerships, highlighting the importance of synergies between government, the private sector, academia, and civil society in designing holistic solutions. The average score for stakeholder satisfaction with cross-sector collaboration reached 7.5 on a scale of 1-10. This figure reflects the effectiveness of the partnership in achieving common goals and provides significant added value in the implementation of public sector transformation projects. Cross-sector collaboration brings diverse perspectives, resources, and skills to the negotiating table, enabling more comprehensive and sustainable solutions.

Through cross-sector partnerships, various stakeholders can share knowledge, experience, and resources to address the complex challenges faced in public sector transformation. This not only accelerates the implementation of innovation, but also ensures that the resulting solutions truly meet the needs of society as a whole. Thus, cross-sector collaboration has proven itself as an effective and relevant approach in achieving the goals of public sector transformation. In an era where the challenges faced are increasingly complex and multidimensional, synergy between various parties is the key to creating sustainable and beneficial changes for society at large.

Advantages of Innovation

Research has revealed that as many as 85% of people feel helped by innovations in public services, reflecting the significant positive impact of public sector transformation efforts. This shows that innovative approaches in the provision of public services have succeeded in meeting the needs of society more effectively, efficiently, and responsively. Communities that feel helped by these innovations show widespread adoption of these changes, creating an enabling environment for continued public sector transformation. In addition to the benefits to society, research also reveals the positive financial impact of innovation in the public sector. The significant decrease in operational costs, which reached 77.55%, highlights the efficiencies gained from the application of technology and innovation. Smart use of technology has helped optimize spending, reduce unnecessary bureaucracy, and increase productivity. Thus, innovation not only provides direct benefits

in terms of better services to society, but also provides tangible financial benefits for the public sector.

These findings provide strong empirical support for continuing to encourage and invest in innovation within the public sector. Innovation is not just about creating new solutions, but also about improving service quality, spending efficiency, and positive impact on society as a whole. Therefore, continuous efforts to encourage innovation and adoption of new technologies in the public sector are essential to ensure that governments can meet the demands of an increasingly complex and diverse society in an era of ever-changing digital economy. These data provide a deeper understanding of the results of public sector transformation in an effort to increase efficiency and innovation in the digital economy era. Through careful data collection and analysis, we can see how far the public sector has come in adopting technology and facing challenges in the process. The significant rate of technology adoption, although not yet at its peak, demonstrates the commitment of the public sector to transform in the face of the dynamics of the digital economy.

In addition, data on digital equity challenges illustrate the complexities that must be overcome in this transformation process. Limited access and technological skills among bureaucracies highlight the need for further efforts in ensuring that the benefits of public sector transformation can be felt by all levels of society. Furthermore, significant support and budget allocations for technology skills training suggest that governments understand the need for investment in developing internal capacity to support this transformation. The importance of cross-sector collaboration is reflected in data on cross-sector partnerships and the level of stakeholder satisfaction with such collaboration. These partnerships provide a solid foundation for various transformation initiatives, enabling pooling resources and expertise from different parties to create more comprehensive and effective solutions. Finally, the direct benefits felt by society and the financial benefits derived from innovation confirm that the transformation of the public sector towards the era of the digital economy is not only theoretically important, but also has a real impact on the daily lives and operational efficiency of governments.

DISCUSSION

Public sector transformation towards increased efficiency and innovation in the digital economy era is an urgent agenda for governments around the world. The changing economic landscape triggered by advances in digital technology has forced the public sector to adapt quickly to meet the demands of an increasingly complex and diverse society. In this discussion, we will explore various aspects related to public sector transformation in increasing efficiency and innovation in the digital economy era. First of all, it is necessary to understand that public sector transformation is not just about adopting new technologies, but also involves changing cultures, processes, and policies. The adoption of digital technology is the main key in improving the efficiency of government operations, from administrative processes to the provision of public services. Process automation, more effective use of data, and integrated systems development are some examples of how digital technologies can help improve efficiency in the public sector (Glinkina et al., 2020).

However, the main challenge in this transformation is the digital divide that still exists among bureaucracy and society. Although digital technology promises many benefits, not everyone has the same access or enough skills to use it effectively. Therefore, efforts to expand access and improve technology skills among bureaucracies and communities are key in ensuring that public sector transformation is inclusive and sustainable. Furthermore, cross-sector collaboration is becoming increasingly important in designing holistic and effective solutions to complex challenges. Partnerships between governments, the private sector, academia, and civil society can lead to better innovation and accelerate solution implementation. Through these partnerships, resources and expertise can be brought together to create a greater impact in public sector transformation (Otia & Bracci, 2022).

In addition, innovation plays a key role in responding to new challenges that arise in the digital economy era. By leveraging new technologies and creative approaches, the public sector can create policies and services that are more responsive, efficient, and relevant to people's needs. Innovation not only improves existing services, but also opens up new opportunities to solve complex problems and design a better future. Finally, it is important to note that the transformation of the public sector towards increased efficiency and innovation in the digital economy era is not an easy or instant process. It takes strong commitment, visionary leadership, and ongoing investment to achieve significant change. However, by proactively addressing these challenges and taking appropriate measures, the

public sector has the potential to serve as a major catalyst in driving inclusive and sustainable economic growth and improving the quality of life of society as a whole in the digital economy era (Lyu & Wang, 2023).

Public Sector Transformation

Public sector transformation in the digital economy is an important journey involving various aspects, from technology adoption to changes in organizational culture. The main impetus has come from technological advances that have changed the way we interact and work. Governments around the world are responding by changing their strategies to improve efficiency, responsiveness, and innovation in public service delivery. One of the main focuses of this transformation is to utilize digital technology to speed up processes, reduce bureaucracy, and improve service quality. Cross-sector collaboration is becoming increasingly important in designing holistic and sustainable solutions. Government, the private sector, academia, and civil society join hands to tackle complex challenges. These partnerships bring together different resources, expertise and perspectives to create better innovations and be more effective in providing public services. Thus, public sector transformation is not only about technological change, but also about building strong relationships between various stakeholders (Amalia et al., 2022).

However, public sector transformation is not without challenges. The biggest challenge is probably overcoming the digital divide among bureaucracy and society. Although digital technology offers many benefits, not everyone has the same access or enough skills to use it effectively. Therefore, further efforts are needed to expand access and increase digital literacy among all levels of society. With all the challenges and opportunities that exist, public sector transformation is an important step in ensuring that the government can answer the needs and expectations of the people in this digital era. With strong commitment, good collaboration among stakeholders, and a focus on innovation, the public sector has great potential to improve their performance, provide better services to society, and create a more inclusive and sustainable future (Garnov et al., 2020).

Increased Efficiency and Innovation in the Digital Economy Era

Increasing efficiency and innovation in the digital economy era is crucial for organizations in the public and private sectors. Technological advances have dominated the business and public service landscape, encouraging organizations to constantly adapt to

remain relevant and competitive. In this context, operational efficiency is one of the main aspects that need to be improved. By leveraging digital technology, organizations can automate processes, minimize human involvement in routine tasks, and optimize resource usage. The use of task management software or automated inventory management systems are clear examples of how technology helps save time, reduce costs, and reduce the risk of human error in day-to-day operations. This automation not only helps improve efficiency, but also opens up space for employees to focus on more strategic and creative tasks, such as data analysis or product innovation. Thus, increasing operational efficiency through the use of digital technology becomes an important foundation for organizations to achieve success in the era of a rapidly changing digital economy (Joukhadar et al., 2023).

In addition to increasing efficiency, the drive for innovation is the key to winning the competition and creating added value in the changing era of the digital economy. Organizations should pay attention to the importance of innovating in various aspects, both in the development of products and services and in the improvement of their business processes. The era of the digital economy does require organizations to always be at the forefront of innovation to meet the needs of a market that continues to grow and change rapidly. The development of new products and services that utilize the latest technology is not only a necessity, but also an opportunity to gain competitive advantage. By leveraging digital technologies such as artificial intelligence, big data analytics, and the Internet of Things (IoT), organizations can produce products and services that are more sophisticated, efficient, and relevant to customer needs (Alvarenga et al., 2020).

In addition, innovation in business processes is also very important. By identifying and removing bottlenecks in operations, organizations can improve their efficiency and responsiveness to market changes. The application of methodologies such as Lean Six Sigma or Agile approaches can help organizations to find new, more efficient ways of running their business processes. This not only helps increase productivity, but also creates a better experience for customers by reducing turnaround time and improving the quality of products or services provided. Thus, innovation is not only an option, but a must for organizations that want to survive and thrive in this challenging digital economy era (Syamsuri et al., 2022).

Transformation towards efficiency and innovation in the digital economy era is not just a step, but a paradigm shift that has a significant impact on organizations. By utilizing

digital technology, organizations can become more responsive to rapid and dynamic market changes. Technology enables organizations to collect, analyze, and interpret data quickly, thus enabling better and faster decision making. Thus, organizations can respond more effectively to opportunities and challenges, enabling them to remain relevant and competitive in increasingly complex markets. In addition, the use of digital technology also allows organizations to provide better services to customers. With the adoption of the right technology, organizations can improve the customer experience through personalization, better responsiveness, and innovation in the way they interact with customers. This helps organizations to build stronger relationships with their customers, increase customer loyalty, and create significant added value (Senyo et al., 2021).

Innovation adoption is also key to staying relevant and competitive in an ever-changing marketplace. Organizations that don't innovate risk falling behind and losing their market share to more innovative competitors. By adopting innovations in products, services, and business processes, organizations can position themselves as market leaders and create significant differentiation. By combining efforts to improve efficiency and drive innovation, organizations can create significant added value and position themselves for long-term success. Therefore, it is important for organizations to continue to invest in digital technologies and innovation culture in order to remain competitive and relevant in the era of an ever-changing digital economy. This not only means adopting the latest technology, but also creating an environment that supports creativity, experimentation, and continuous learning. Thus, organizations can face future challenges with confidence and create sustainable added value for all stakeholders (Datta et al., 2020).

CONCLUSION

In the era of an ever-evolving digital economy, public sector transformation towards increased efficiency and innovation is an urgent imperative. This research highlights the importance of public sector adaptation to technological developments and changing market dynamics. From this study, it can be concluded that:

1. **Digital Technology Adoption:** Public sector transformation involves the use of digital technology to improve operational efficiency, responsiveness to societal needs, and innovation in the provision of public services. The adoption of digital technology is the key to increasing productivity and improving service quality.

2. **The Challenge of Limited Access and Skills:** One of the major obstacles to public sector transformation is limited access and technological skills among bureaucracies. Continuous technology skills building and digital divide-solving are crucial in enhancing the effectiveness of public sector transformation.
3. **The Importance of Innovation:** Innovation is the driving force in the transformation of the public sector. Public organizations must continuously innovate in their products, services, and business processes to remain relevant and competitive in an increasingly complex marketplace.
4. **Cross-Sector Collaboration:** Cross-sector collaboration is becoming essential in designing holistic and sustainable solutions. Involving the private sector, academia, and civil society in the public sector transformation process can broaden the necessary resources, expertise, and perspectives.
5. **Positive Impact on Society:** Successful public sector transformation has a significant positive impact on society, such as improving the quality of public services, increasing community satisfaction, and inclusive economic growth. This shows that investment in public sector transformation is a very valuable step for society as a whole.

Thus, the conclusion of this study confirms that the transformation of the public sector towards increased efficiency and innovation in the era of digital economy is an important and urgent step. Public organizations need to adapt quickly to technological changes and market dynamics to meet the increasingly complex demands of society. By combining efforts to improve operational efficiency, address challenges of limited access and skills, drive innovation, and strengthen cross-sector collaboration, public sector transformation can create significant added value for society and position themselves for long-term success in an era of ever-changing digital economy.

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