Organizing New Public Services that Emphasize the Use of Digital Technology and Sustainability: Challenges and Opportunities

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Introduction

In the present era, the development of digital technology has progressed rapidly and has played an important role in changing the way people live and work. Digital technology is not only transforming business sectors and industries, but it also has the potential to raise the quality of public services in many areas, such as health services, education, transportation management, and resource management. However, the use of digital technology in providing public services still faces many challenges, including information security, equality of access, development of people's digital skills, and bureaucratic adjustment (World Economic Forum, 2021). Meanwhile, sustainability is becoming an increasingly important issue in all sectors of society. Sustainable development means using resources in an efficient and environmentally responsible manner to create a good and stable well-being for present and future generations. Integrating digital technology with sustainability concepts in public services is an interesting approach that has the potential to solve many problems facing society (World Bank, 2021).

The concept development and presentation, "New Public Services Focused on Digital Technology and Sustainability: NPDS," has arisen in response to emerging needs and challenges. The combination of technology and sustainability concepts not only improves service efficiency but can also reduce environmental impact and create long-term sustainability (Forbes, 2020).

This article aims to explore the key elements, challenges, and opportunities of reorganizing public services that emphasize the use of digital technology and sustainability. It is hoped that this content will be beneficial to policy development and operations in various sectors in Thailand.

The Values and Philosophy Behind the New Public Service Concept Focused on Digital Technology and Sustainability

The new public service concept focusing on the use of digital technology and sustainability has interconnected values and philosophies. It can be described as follows:

Values

The values of the concept of public service provision focusing on the use of digital technology and sustainability consist of: Convenience and Efficiency: Convenience and speed are important values in the use of digital technology in providing public services. Providing citizens with convenient and quick access to services and information is important to create efficiency and satisfaction in service delivery (Boston Consulting Group (BCG), 2019).Transparency and Trust: Transparency in government operations and regular disclosure of public information help build trust in government services and operations (International Monetary Fund (IMF), 2018).Public Participation: Creating opportunities for citizens to participate in government decision–making and management helps build confidence and understanding in politics (Harvard Kennedy School, 2018).Creating Sustainability: Using digital technology and sustainability concepts to develop public services helps create a sustainable society with a better quality of life for future generations (Harvard Business Review, 2019).

Philosophy

The philosophy of the concept of public service provision focusing on the use of digital technology and sustainability consists of: Equality of Service: Using digital technology to provide equal public services for everyone, regardless of their economic or social conditions (Equality and Human Rights Commission, 2019).Collaboration: Promoting cooperation between the government, private sector, and civic society in developing and providing public services is important in ensuring long–term sustainability and viability (David M. Boje, 2020).Trust Building: Using digital technology to build trust between citizens and government through transparent information disclosure and appropriate response to people's needs (Grimmelikhuijsen et al., 2013).Continuous Improvement: Using digital technology to continually improve and develop public services by listening to opinions and adapting to the needs of the people and changes in society (Ilsen Leif, 2015).

Important Elements of the New Public Service Organization that Focus on the Use of Digital Technology and Sustainability

The concept of "New Public Services Focused on Digital Technology and Sustainability (NPDS)" has several important elements that together create the foundation for the development of public services in the digital era, focusing on sustainability. These components include:

1.Data Integration and Management: Managing and linking data from different sources is key to providing new public services. Data collected from government agencies and the private sector must be managed effectively so that it can be used in appropriate decision-making and planning, including data security to protect personal information (United Nations Department of Economic and Social Affairs. (2020). "E-Government Survey 2020." publicadministration.un.org)

2.Digital Infrastructure: High-quality digital infrastructure that covers all areas is necessary, such as the development of high-speed internet networks, cloud computing systems, and 5G technology to be able to support the use of digital services and interconnectivity of various devices efficiently (McKinsey & Company, 2020).

3.Accessible and Efficient Services: Providing services that citizens can access quickly and easily is important. The use of digital technology can make services faster and more efficient, such as providing services through applications, using the online system to make transactions, and using AI to answer questions and provide customer service (Gartner, 2021).

4. Security and Privacy: Personal data protection and system security are factors that cannot be overlooked. The risk of cyberattacks and data breaches must be rigorously managed through security measures such as data encryption, access verification, and the use of cyber threat protection systems (OECD, 2020).

5.Digital Skills and Training: Developing digital skills for government officials and the general public is important to be able to use new technology efficiently and safely. Organizing training and education programs on digital skills is necessary (International Telecommunication Union (ITU). (2020). "ICTs for a Sustainable World #ICT4SDG." itu.int)

6.Sustainability and Resource Management: The development of public services must take into account sustainability and efficient resource management. The use of digital technology can help reduce the use of resources, reduce greenhouse gas emissions, and increase efficiency in energy use, such as using intelligent energy management systems and using technology to reduce waste (United Nations, 2015).

7.Public Engagement: Creating channels for citizens to participate in the design and development of public services is important. The use of digital technology can make it easier for citizens to participate, such as using social media and organizing online meetings, and the use of digital platforms to receive opinions and suggestions from citizens (European Commission, 2020).

In summary, reorganizing public services with a focus on digital technology and sustainability requires cooperation from all sectors, including the government sector, the private sector, civil society, and the

general public. Key elements in increasing the efficiency and effectiveness of public service delivery include data linking and data management, digital infrastructure, accessible and efficient services, security and privacy, training and development of digital skills, sustainability and resource management, and public participation. These elements are crucial for creating a sustainable and just society in the future.

Evolution of the Concept: Reorganizing Public Services with a Focus on Digital Technology and Sustainability

New Public Services focused on digital technology and sustainability (NPDS) have received considerable attention in recent decades due to changes in the environment occurring both domestically and internationally. It requires us to understand and adapt to these changes in order to provide public services efficiently and modernly, according to the needs of people in the present era.

Over the past decade, digital technology has been instrumental in giving us the opportunity to develop and improve the efficiency of public service delivery. Using digital technology to manage resources and provide services helps enhance sustainability in many areas, such as reducing energy use and minimizing processes that pollute the environment. This is especially crucial in adapting to environmental changes that cause humans to face more complex and diverse problems.

Additionally, the use of digital technology in the provision of public services also helps increase efficiency and transparency in government operations, with the goal of reducing the burden of duplication and the use of unnecessary resources. This aims to create a service system that can respond effectively and efficiently to the needs of the people.

Furthermore, developing policies and operational mechanisms that emphasize sustainability is important to ensure that the use of digital technology will create long-term benefits for the public system. It also promotes innovations focused on sustainability, such as developing applications that can help monitor and improve service efficiency or using blockchain technology to increase reliability in government operations.

Reorganizing public services with a focus on the use of digital technology and sustainability is likely to create a sustainable public service system. The following developments have been noted (Smith J., 2020, 542–560):

2012 – 2017: Starting with using digital technology to increase convenience in providing public services, such as using applications for paying taxes and other services online and building digital infrastructure for information management and communication within government agencies to increase efficiency and speed in responding to people's needs.

2018 – 2022: Increasing the ability to use digital technology to provide services that adapt to the environment. By using modern technology such as blockchain to maintain security and transparency in government operations and promoting innovation that supports sustainability by supporting projects that use digital technology to solve social and environmental problems.

2023 – Present: Accelerating the use of digital technology in public service delivery to create convenient and efficient access channels for citizens and strengthen the ability to respond to environmental changes. This includes accelerating the adoption of digital technology to help manage health and environmental crises.

Public services must consider the importance of combining knowledge and technology to meet the needs of society, using the concept of "reorganizing public services that focus on the use of digital technology and sustainability" to create sustainable and effectively connected communities in the digital and sustainability era. This involves creating cooperation between government agencies and network partners to develop innovations that benefit everyone in society. It also creates space to develop and adapt to a rapidly changing world with technology.

The use of digital technology and sustainability plays an important role in creating connections between citizens and government agencies and fostering a just and equal society. This ensures transparency and trust in the decision–making process, especially in situations where complex issues such as health crises, natural disasters, or social changes need to be addressed.

The concept development of "reorganizing public services focused on the use of digital technology and sustainability" is likely to continue this way in the future. By fostering collaboration between government agencies, the private sector, and communities both nationally and internationally, we can create a space for exchanging knowledge and technology to achieve sustainable development in society and the economy that everyone can access and use equally.

A Process for Organizing New Public Services that Emphasizes the Use of Digital Technology and Sustainability

Reorganizing public services with a focus on digital technology and sustainability can start with understanding service needs and efficiency by considering the target population and problems that need to be solved in the community or organization. The initial steps are as follows:

1. Analyze needs: Study and analyze needs and problems regarding public services in communities or organizations, such as convenient access to services, learning and educational needs, or sustainable management of natural resources.

2. Study appropriate technology: Study and analyze digital technology suitable for use in solving problems and responding to needs, considering technical and financial suitability.

3. Create an action plan: Develop operational plans that are appropriate and consistent with the objectives and needs of service users, including setting goals and how to measure success.

4. Create and develop technology: Create and develop technology suitable for use in providing public services by using research and development to suit needs and goals.

5. Testing and evaluation: Test and evaluate the usability and performance of the developed technology to ensure that it can meet the needs of users and meet the set goals.

6. Continuous improvement and development: Continuously improve and develop according to evaluation results and user needs, using information and suggestions to improve and adjust according to the new public service goals of the relevant organization or community.

The Challenge of Organizing New Public Services Focused on Digital Technology and Sustainability

Organizing new public services that emphasize the use of digital technology and sustainability has many challenges that require effective management and adaptation from relevant agencies, as follows:

1. Cybersecurity
    o   Cyber Attacks: The increase in cyberattacks aimed at destroying or stealing sensitive data from government digital systems creates a risk to the security and safety of information. Preventing and dealing with these attacks requires highly secure technology and measures (National Cyber Security Agency: NCSA).
    o   Data Privacy Protection: Digital storage and processing of citizens' personal data must ensure strict protection of this data to prevent privacy violations, which requires strict compliance with laws and security standards (Personal Data Protection Commission: PDPC).

2. Digital Divide
    o   Access to Technology: Some groups of people may not have access to high-speed internet or digital devices, which creates inequality in access to public services. Therefore, there is a need for a project or measure to allow everyone to have equal access to technology (World Bank, 2020).

3. Digital Literacy Citizens and personnel of government agencies must have the skills to use digital technology effectively. Training and development of digital skills are, therefore, necessary so

that everyone can take full advantage of technology (Thailand Professional Qualification Institute: TPQI).

4. Bureaucratic Adaptation Changing work processes within government agencies to reflect the use of digital technology and sustainability concepts is a major challenge. Bureaucracies must be flexible and able to adapt quickly to new technologies (Bertot, J. C., Jaeger, P. T., & Grimes, J. M., 2010, 264–271).

5. Investment and Budget

   o Development and Maintenance Costs: Development and maintenance of digital infrastructure require a large budget. This is a challenge for government agencies to procure and allocate budgets efficiently (Accenture, 2019).

6. Interagency Coordination

   o Interagency Collaboration: Providing public services focused on digital technology and sustainability requires coordination and cooperation between different government agencies, which sometimes may face problems of inconsistency or conflict, including the sharing of information and resources (Information and Resource Sharing). Sharing information and resources between agencies is something that must be given importance to increase efficiency in providing services. However, there may be barriers related to information security and system security (National Academy of Public Administration (NAPA), 2020).

7. Sustainability Maintaining sustainability includes natural resource management. Operations and services of government agencies must take into account the sustainable use of natural resources. This requires good planning and management, including Climate Change

In summary, reorganizing public services with a focus on digital technology and sustainability is a process that faces many challenges. The management and adaptation of related agencies must involve effective planning and execution so that public services can respond to the needs of citizens and create a sustainable society in the future.

Opportunity to Reorganize Public Services Focused on Digital Technology and Sustainability

Applying digital technology and sustainability concepts to reorganize public services opens up many opportunities for improving government services and operations. These opportunities can be summarized as follows:

1. Enhanced Service Efficiency Adopting digital systems reduces complex steps and time spent on operations (Streamlined Processes), such as submitting documents and requesting permission

online. Services through mobile applications make it easier for citizens to access services. It also helps reduce operating costs (Cost Reduction), such as reducing paper use, savings on printing and postage costs, and reducing people's travel to receive services at government offices (Accenture, 2019).

2. Transparency and Accountability Using digital technology to store and disseminate information in real-time (Real-time Data Access) allows citizens to check in real-time. It helps increase transparency in the work of government agencies, including the disclosure of public information (Open Data Initiatives) for the public to access and use, such as financial information and procurement. It helps build trust and transparency in the work of the government sector (Bertot, J. C., Jaeger, P. T., & Grimes, J. M., 2010, 264-271).

3. Public Participation Creating online platforms that allow citizens to participate (Engagement Platforms) in government decision-making and management, such as voting in local elections and participating in the design of policies or community development projects, including the use of digital technology to communicate with the public, helps receive opinions and suggestions quickly and thoroughly (United Nations Department of Economic and Social Affairs, 2018).

4. Innovation and Development Research and development of technology (R&D in Technology) and the introduction of new technology to be applied in the provision of public services help stimulate research and development of technology in the government sector, such as using AI and Machine Learning to analyze data and develop efficient services, including supporting entrepreneurs and start-ups and collaborating with them to develop new digital solutions (Supporting Entrepreneurs and Startups) for public service provision. It helps create opportunities for economic development and innovation in the country (Harvard Business Review, 2019).

5. Skill Development and Learning Digital Skill Training: Education and training of citizens and officials in the use of digital technology help increase the ability to take advantage of technology and increase work efficiency and continuous learning (Continuous Learning) by supporting continuous learning and skill development through online learning platforms, helping citizens adapt and learn new technology at all times (National Skills Development Corporation (NSDC), 2020).

6. Improved Responsiveness Digital services provide citizens with 24-hour access to public services (24/7 Access) with no time limit, making it more convenient and better meeting their needs. It can also respond to emergencies (Emergency Response), allowing for quick and efficient situation

management, such as using a warning system via a mobile application (National Digital Service (UK), 2020).

7. Building Sustainability Using energy-saving technology efficiently (Energy Efficiency) in government operations, such as using LED electrical systems and using renewable energy, helps reduce energy use and environmental impact. It also helps reduce the use of resources (Resource Optimization) efficiently, such as reducing paper use and reusing materials, which helps promote long-term sustainability (International Institute for Sustainable Development (IISD), 2020).

8. Connected and Equitable Society Linking information and services between various agencies (Integrated Information and Services) helps citizens access services conveniently and quickly, such as using electronic ID cards to access various services, resulting in equality in access to services (Equitable Access to Services). It helps reduce inequality in access to public services, enabling all citizens to receive quality and equal services (World Bank, 2021).

In summary, opportunities arising from new public services that focus on the use of digital technology and sustainability come in many forms, including increased efficiency, transparency, and public participation, innovation development, improving skills and learning, better response, creating sustainability, and creating a connected and equitable society. Actions taken in this direction will help create a sustainable and continuously developing society in the future.

Factors Affecting the Effectiveness of New Public Service Arrangements that Focus on the Use of Digital Technology and Sustainability

Developing new public services that emphasize the use of digital technology and sustainability has many factors that affect the effectiveness of the operation. These factors can be divided into several categories:

1. Investment in Technology Investment in technology is an important factor affecting the effectiveness of public services. Modern technology increases work efficiency, reduces costs, and improves service delivery to citizens. Using technology such as Artificial Intelligence (AI), the Internet of Things (IoT), and blockchain play important roles in developing and improving public services (OECD, 2018).

2. Policy and Legislation Policies and laws that support the use of digital technology in public services are another important factor. Establishing clear policies and enacting legislation that supports digital development will help create a systematic and effective framework (European Commission, 2020).

3. Expertise and Skills of Personnel with knowledge and skills in digital technology play an important role in the use of technology in public services. Training and skills development of personnel will help ensure the effective use of technology (UNDESA, 2018).

4. Interagency Collaboration Coordination and cooperation between public and private agencies are important factors that help operations run smoothly and efficiently. Sharing information and resources between agencies increases service efficiency (Wirtz, B.W., & Kurtz, K., 2018).

5. Public Awareness and Participation Public awareness and participation are important factors in the development of public services. Citizens who participate in giving suggestions and using public services will help develop services in a direction that is more responsive to the needs of citizens (Nam, T., & Pardo, T.A., 2011).

6. Resources and Budget Adequate resources and budget are important factors in developing and improving public services. Proper allocation of budget and resources will help ensure effective implementation (IMF, 2020).

In summary, the factors affecting the effectiveness of new public service arrangements that focus on the use of digital technology and sustainability are multidimensional. Investing in technology, policy and law, personnel expertise and skills, interagency cooperation, public awareness and participation, and resources and budgets all play an important role in developing and improving public services to be efficient and sustainable in the long term.

Future Trends in the Provision of New Public Services Focused on the Use of Digital Technology and Sustainability

In an era where digital technology plays an important role in the lives of people around the world, the development of public services cannot avoid the use of technology to improve and increase the efficiency of various services. In addition, sustainability has become an increasingly important factor. As environmental problems become more and more serious, it has become important to develop public services that are not only efficient but also consider the impact on the environment and natural resources. Future trends in organizing new public services that focus on using digital technology and sustainability will be a combination of using modern technology to provide efficient services to citizens and sustainable development that balances human needs and environmental conservation. This trend reflects a shift in the way government agencies and organizations think and operate as they adapt to a rapidly changing social and technological environment. These trends are summarized as follows (World Economic Forum, 2021):

1. Bringing digital technology to the general public service system: In the future, the use of digital technology in managing and providing public services will increase significantly, such as using mobile applications to call for service or using automated systems to manage customer information, which will help increase convenience and efficiency in providing services.

2. Creating a sustainable service system using technology: Government agencies will be able to analyze data and monitor the results of service delivery efficiently, such as using big data analytics to monitor and improve the functioning of public service systems.

3. Increasing emphasis on sustainability: In the future, public services will have to focus heavily on sustainability, such as using renewable energy in operations or reducing the use of paper and materials that influence the environment.

4. Developing and deploying new innovations: Innovation in digital technology will be a key factor in the development of new public services in the future, such as the use of artificial intelligence or blockchain systems to increase safety and reliability in operations.

5. Strengthening cooperation between agencies and network partners: In the future, collaboration between government agencies, the private sector, and communities will be very important in developing and adapting to a rapidly changing environment.

6. Creating a connected and fair society: In the future, using digital technology to manage and provide public services will create an efficient connected society, making people have convenient and equal access to various services and information.

7. Decentralization and digital democracy: In the future, the use of digital technology in management and decision-making at the government level will help make operations more standardized and transparent. Communities can participate in decision-making and participate in their own development.

8. Using a financially efficient system: The use of digital technology in budget and financial management at the government level will increase the willingness to use resources and increase efficiency in budget use.

9. Developing innovations linked to sustainability: Future sustainability-focused innovation will play a key role in improving public services by using digital technology to develop innovations linked to sustainability, such as the use of renewable energy in public systems.

10. Promoting Learning and Developing New Skills: In the future, supporting learning and developing new skills regarding technology will be an important part of public service delivery. It will make people ready to access and use new technology efficiently and confidently.

11. Creating an Environmentally Friendly Place: In the future, the use of digital technology to reduce environmental impacts will become more important. Developing public services that are environmentally friendly, such as reducing paper use and using energy efficiently, and creating a friendly environment will be crucial.

12. Risk and Safety Management: In the future, risk control and security in the use of digital technology will be extremely important. This is because it is important to protect personal information and maintain public trust in the service.

13. Building Communities and Developing New Innovations: In the future, creating a community that supports the exchange of knowledge and the development of new innovations related to the use of digital technology and sustainability will be important factors that promote continuous development.

14. Creating Space for Developers and Collaborators: In the future, creating an open space for developers and collaborators to work together to create new innovations and develop public services to be more efficient will be essential.

15. Developing Appropriate and Sustainable Policy Guidelines: In the future, it will be important to develop appropriate and sustainable policy approaches to managing and using digital technologies in public services so that this development can be sustained in the long term.

Conclusion

The article "Reorganizing Public Services Focused on Digital Technology and Sustainability: Challenges and Opportunities" aims to explore trends and directions in the development of public services in an era where digital technology is becoming an essential part of people's daily lives. By using digital technology and maintaining sustainability, we have come up with new ideas that will help public services be more efficient and of higher quality. This article points out that the introduction of digital technology into public services is critical in making those services more user-friendly and efficient. The use of these technologies helps to reduce complexity, speed up, and provide services that meet the needs of citizens. From the survey, it was found that there are some challenges, such as trust issues and data security, adjusting the bureaucracy, developing skills and knowledge for government personnel, and creating cooperation between various agencies. However, there are many opportunities to develop and improve sustainable public services and successfully introduce technology and sustainability into the public service system. If the problems can be solved and these opportunities are used appropriately, the provision of public services that focuses on digital technology and sustainability will continue to be key trends.

Technology will continue to be used to improve public services, creating a trusted community and building cooperation between agencies and developing innovations to fully meet the needs of the people (OECD, 2021).

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