

Applying Information Technology In Online Public Administrative Service Provision: A Study In The Vietnamese Administrative Division

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Abstracts:

The digital transformation process with the core of digital technology application has made objects and devices brighter, creating many new services. This is an opportunity for state agencies to apply new technology to optimize processes. Management methods in online public service provision increase operational efficiency, reduce administrative costs, and serve the needs of people and businesses well. However, these opportunities are posed, requiring state agencies to develop solutions quickly to take advantage of information technology. Government fixes internal limitations in infrastructure, legal basis, human resources, facilities, and beneficiaries to better provide online public services to people and businesses.

Keywords: information technology, public administration, administrative procedures, online.

I. INTRODUCTION

Providing high-level online public services is always an essential task in e-government development towards digital government; improve the effectiveness, efficiency, publicity, and transparency of activities of state agencies. From there, it will reduce time and costs for organizations and individuals when carrying out administrative procedures. The application of information technology in state agencies plays a vital role in the roadmap to building e-Government to increase efficiency and transparency in public administrative services. The provision of online public administrative services in the internet environment facilitates people and businesses to save time and effort in the process of using public services and, at the same time, reduces pressure on state agencies in the process of using public services and the implementation of administrative procedures. In the past, many legal documents have been issued, creating a legal corridor for promoting the

application of information technology to reform activities and improving the quality and efficiency of administrative services. Public administration, such as Resolution No. 36a/NQ-CP dated October 14, 2015, of the Government on e-Government; Decision No. 1819/QD-TTG dated October 26, 2015, of the Prime Minister approving the National Program on information technology application in the activities of state agencies in the period 2016-2020,... Resolution No. 36a/NQ-CP states that in the three years 2015 - 2017, the focus will be on promoting administrative reform in association with increasing the application of information technology in management and providing online public services. Ensure to shorten the processing process, reduce the number and simplify, standardize the content of documents, reduce the time and cost of administrative procedures, and strive to have 100 central ministries and branches by the end of 2016. Public services are provided online to the extent that it allows users to fill out

and submit online forms of documents to agencies and organizations providing services.

2. ACTUAL SITUATION OF INFORMATION TECHNOLOGY APPLICATION IN ONLINE PUBLIC ADMINISTRATIVE SERVICES

Following the direction of the Government, over the past, ministries, branches, and localities have focused on promoting the application of information technology in close association with the implementation of administrative tool tasks, minimizing the paper ratio in the direction and administration. Overall, up to now, the application of information technology in management and the provision of online public services for administrative reform and administration modernization has achieved remarkable results.

The basic information technology infrastructure system is completed, and the interconnection between agencies and units is ensured; the sending and receiving of electronic documents have replaced the traditional form of sending and receiving documents; improve the quality of online public service provision, develop telecommunications infrastructure and ensure information technology human resources. In 2017, there were 17 ministries, ministerial-level agencies, and 49 provinces and centrally-run cities deploying wide-area networks - WANs, which connected over 80% of units under ministries and branches and over 75% of departments, branches, districts, provinces, and cities are directly under the Central Government. Civil servants equipped with computers for their work reached 90.95% at the central level, 97.14% at provincial-level departments, agencies, and sectors, and 90.87% at district-level People's Committees. The use of digital signatures in sending and receiving electronic documents is also interested by ministries, branches, and localities, promoting the implementation at

affiliated units. There have been 18 ministries and 53 provinces and centrally-run cities using digital signatures and providing digital signatures for over 75% of related agencies and departments. Many places have integrated digital signatures into email systems, document management, and administration systems to exchange documents in the network environment between agencies and units. Many localities implement this content well, such as Ho Chi Minh City, Hanoi, Quang Ninh, An Giang, Ba Ria - Vung Tau, Da Nang, Dong Nai, Quang Ngai, Nghe An, Lam Dong... In 2018, 18 ministries, branches, and 54 localities had built Data centers and equipment to ensure information security at different scales and gradually meet the needs of centralized deployment, management, and maintenance of information systems and application software effectively. Of the 19 ministries and ministerial-level agencies listed, 16 churches, agencies, and 57 provinces and cities have promulgated an e-government architecture for implementation, serving as a foundation for e-government development. The electronic mail system is deployed by ministries, branches, and localities, maintains stable operation, and provides mailboxes for the majority of public servants to use in their work; 98.8% of cadres and civil servants in ministries and branches and 82% of cadres and civil servants in provinces and cities regularly use e-mail to exchange work. The document management and administration software system is deployed in 100% of ministries, branches, and centrally-run municipalities. According to statistics, 18 churches, departments, and 46 towns and regions have deployed document management and shared administration systems at different scales.

The application of information technology in public administration services in the past time with breakthroughs in technology has been creating opportunities for millions of people to be connected to mobile devices with high speed and speed unprecedented levels and capacity. This

creates opportunities for people to engage with the government in openness and transparency. According to statistics of the Department of Informatization - Ministry of Information and Communications, as of May 2020, the total number of online public services at level 3 and level 4 provided to people by ministries, branches, localities, and enterprises is more than 56,000 services, of which the number of level 4 online public services is nearly 17,000.

The rate of online public services at level 3 and level 4 with online filings is 25.62%. In the past, the percentage of online public services at level 4 provided by ministries, branches, and localities to people and businesses has continuously increased, from 4.55% in 2018 to 10.76% in 2019; reached nearly 14% in May 2020, double that of the same period last year (about 7%). However, this number is still a big gap compared to the target that the Prime Minister requires ministries, branches, and localities to achieve in 2020 of 30% of online public services at level 4, etc. Thus, the promotion of information technology application by ministries, branches, and localities has brought positive results, improving the operational efficiency of state administrative agencies and the quality of service provision. Public services for people and organizations. However, applying information technology in online public administrative services also poses many difficulties and challenges for state management agencies in general and online public service provision in general separately, namely:

Internet infrastructure is still weak:

Internet infrastructure in Vietnam has been continuously improved over the past year, but it is still weak. According to the Department of Telecommunications report - Ministry of Information and Communications. By the end of the second quarter of 2021, Vietnam's total international Internet bandwidth is 13.7 Tb/s; domestic bandwidth is 4.18 Tb/s. Vietnam's

Internet network infrastructure is considered more complete but still at a low level compared to the region and the world. Specifically, Vietnam's connection to the world depends on seven undersea fiber optic cables, or about 14 million people on average using one cable line. Meanwhile, in Southeast Asia alone, Singapore has 30 cable routes, Malaysia has 22 trails, and Thailand has ten courses. Globally, countries with many Internet cable routes can include the US 93 routes, the UK 56 routes, Japan 27 routes, and France 23 routes. The current infrastructure is not enough to serve subscribers. When there is a problem, such as a cable break, the network operator faces difficulties because there is insufficient response infrastructure. The user's demand is increasing, with an average increase of 30% per year.

Information technology infrastructure is not synchronized:

Many agencies and units have only invested in hardware and servers but have not focused on building network connections to share data and information. The technology and capacity of local information technology solution providers still have some shortcomings and are not transparent in product acceptance.

Currently, many localities, ministries, and branches have built one-stop software but cannot integrate with the data of specialized ministries; for example, Ba Ria - Vung Tau province has made one-stop software but not combined with the data of 5 specialized ministries, including the Ministry of Transport; Ministry of Labor, Invalids and Social Affairs; Ministry of Planning and Investment; Judicial; Ministry of Industry and Trade. The province has also made a written request to integrate data with these ministries, but currently, only the Ministry of Planning and Investment has agreed to connect. The Judiciary sector does not have a personal data connection with the Tax and Banking sectors. In addition, information security is a big issue that needs

attention from state management agencies in providing online public services. In addition, there are still several barriers to the investment mechanism of information technology applications, making it difficult for businesses to implement projects. This leads to some ministries, branches, and localities not having enough information about digital data.

The level of information technology of civil servants is still limited:

Some agencies providing online public services, especially in remote areas, have limited information technology skills in their cadres and civil servants. In particular, there is a lack of high-quality human resources to serve the administration, operation, and exploitation of the invested information systems, especially for the Provincial Data Integration Center and network administrators at the provincial data center localities. In many localities, there is no staff in charge of information technology, so the provision of online public services is not guaranteed. On the other hand, the condition of online public services in localities is still manual, especially in rural, remote, and isolated areas, which is a difficulty and obstacle when using online public services levels 3 and 4. Besides, the work of communicating and guiding people to use information technology has not been powerfully deployed. This is also one reason for fear of accessing information technology equipment and online public services.

Many levels and sectors have not yet clearly defined the roadmap and specific tasks to implement the application of information technology, and there is a lack of connection between the application of information technology with administrative procedure reform and marginal innovation. Ways and methods of working, especially in relations with people and businesses, have not yet promoted the role of the leader in directing the implementation. In addition, there are no regulations on data

connection and sharing in the activities of state agencies; there is a lack of specific rules on records, electronic archives, the legal validity of electronic documents, and regulations on the use of electronic documents in administrative transactions. In addition, the safety and security of information systems of state agencies have not been paid due attention. Incentive policies to promote the development and application of information technology have been slowly implemented.

3. SOME CHALLENGES IN IMPROVING THE QUALITY OF ONLINE PUBLIC SERVICE DELIVERY

The digital transformation process with technological breakthroughs in various fields has also created opportunities for millions of people to be connected to mobile devices, which have the power, speed, and large capacity like never before. This creates an opportunity for people to openly and transparently with the government. However, the digital transformation process also poses many difficulties and challenges for state management agencies in general and online public service provision in particular, specifically:

Firstly, about thinking and management of online public service delivery.

In modern society, the role of the Government in general and state agencies, in particular, has changed. The modern State is a serving State, taking the people as the center, eliminating the ask-for-give mechanism. Therefore, online public services are also changing according to the people-centered approach. The contingent of cadres, civil servants, and public employees needs to change their thinking as servants, take people as customers, adapt to the new environment, and build a service culture of public administration.

It is necessary to identify the relationship between information technology and administrative reform. In particular, information technology must be the means and the goal of creating a smooth and effective operation of the state administrative apparatus. Administrative reform sets the goals and requirements for establishing information technology systems. The degree of administrative reform determines the scale and scope of information technology application. The process of selecting information technology systems in state agencies must derive from the goal of establishing order, building processes, mechanisms, and coordination relationships between functions at agencies and levels.

Secondly, the quality and convenience of online public services have not met the requirements.

Currently, ministries, branches, and localities have made great efforts and achieved significant results in implementing e-government construction in general and online public service provision in particular. On December 9, 2019, the Prime Minister opened the National Public Service Portal with eight public service groups. As of March 8, 2021, more than 2,800 public services have been integrated and provided out of a total of nearly 6,800 administrative procedures at four levels of government (with more than 116 million visits, more than 468,000 registered accounts; more than 42.5 million records synchronized status; over 940,000 records made online and more than 67,000 electronic payment transactions with a total amount of more than 26.7 billion dong). Received and supported over 53,000 calls and more than 10,000 complaints and recommendations, saving more than 8,100 billion VND/year. Currently, 63/63 provinces and cities have publicized the progress of dossier processing on the Government Portal; 83 online public services assigned to 20 ministries and branches have so far deployed 78/83 online

public services; 44 online public services have been delivered to localities. Currently, 32/63 localities have been implemented.

In addition to the achieved results, the organization of online public service delivery also has many limitations, such as administrative procedures provided online in the electronic environment are just simple procedures (declaration), reporting, coordinated communication, and not completing the entire process online). The situation of public service provision is overlapping among ministries, branches, and localities, leading to some inefficient online public services.

This is because the units have chosen inappropriate administrative procedures such as a small number of transactions, complicated documents, incomplete legal basis, or funding to maintain digital signatures to declare the level. On the other hand, the selection of software suppliers is not uniform, leading to software errors. There is no document specifying the shared platform to agree on the database or the mandatory criteria required to provide public services at levels 3 and 4). Meanwhile, the trend of digital transformation always demands the need to provide online public services in the direction of personalization, independent of time, space and data sources, meeting the requirements of citizens instantly (citizens and organizations only need to use one online account to transact with all administrative agencies, all personal information is automatically processed and provided when performing transactions).

Thirdly, the quality of the cadres and civil servants operating the online public service system and the people's information technology application skills.

Both service providers and users determine the efficiency of online public service provision and use. Therefore, it is required that the contingent of civil servants operating the online

public service system and the people need to improve their knowledge and skills in applying information technology. In fact, in some agencies providing online public services, the level of information technology of the physical staff is still limited; in many localities, there is no staff specialized in information technology at agencies and units, so it is not possible to fully provide online public services as required.

On the other hand, the provision of online public services in localities is still running in numbers, and the handling of administrative procedures is still manual, especially in rural, remote. Isolated areas are difficulties and obstacles when using online public services at levels 3 and 4. Besides, the work of communicating and guiding people to use information technology has not been vigorously implemented. This is also one reason for fear of accessing information technology devices and online public services.

Fourthly, the facilities for online public service provision have not been synchronously invested.

The data information system has not been connected and shared between information systems, and the quality of data and information has not been updated in a timely and accurate manner. Many information systems have been deployed but have not yet ensured information safety and security. In addition, there are still several barriers to the investment mechanism of information technology applications, making it difficult for businesses to implement projects. This leads to some ministries, branches, and localities not having enough information about digital data. In addition, information security is a big issue that needs attention from some management agencies in providing online public services.

4. SOLUTIONS FOR EFFECTIVE APPLICATION OF INFORMATION

TECHNOLOGY IN ONLINE PUBLIC ADMINISTRATIVE SERVICES

To continue to inherit and promote the achievements, upgrade the application of information technology to online public services, step by step, modernize the state administration, especially in the context of the revolution. Industry 4.0, in the coming time, it is necessary to continue to focus on the following contents:

4.1. Identify the relationship between information technology and public administrative services.

To apply information technology in providing adequate public administrative services, it is necessary to define information technology as the means and goal of creating a smooth and effective operation of the state administrative apparatus. Administrative reform sets the goals and requirements for establishing information technology systems; the degree of administrative reform determines the scale and scope of information technology application. The process of selecting information technology systems in state agencies must derive from the goal of establishing order, building processes, mechanisms, and coordination relationships between functions at agencies and levels.

4.2. Creating a legal corridor for the deployment of information technology applications

Based on the E-Government Development Strategy towards Digital Government from 2021 to 2025, with orientation to 2030; Decree No. 45/2020/ND-CP dated April 8, 2020, of the Government on implementing administrative procedures in the electronic and integrated environment, providing online public services on the National Public Service Portal. It promptly issues documents, regulations, and plans to create a legal corridor for the implementation of IT applications synchronously and methodically in

providing online public services, such as data protection. Personal identification, electronic identification, authentication, building a national database on population, national land database, etc.

Regularly review and improve online public service providing quality and efficiency at levels 3 and 4 according to the approved lists in Decision No. 846/QD-TTG dated June 9, 2017, and Decision No. No. 877/QD-TTG dated July 18, 2018, of the Prime Minister. In the case of providing online public services outside the list approved by the Prime Minister, the online implementation criteria must be met, and there is a large number of transaction records. Ministries, sectors, and localities should develop and implement strategies, programs, and plans. At the same time, promulgate regulations on the exchange, storage, and handling of electronic documents in the activities of state agencies; manage, exploit and use expansive area network infrastructure; management, exploitation, and use of shared infrastructure; ensure information security in information technology application activities of state agencies, synchronously deploying information technology infrastructure in localities, etc.

4.3. Improve the quality of the contingent of civil servants

It focuses on building high-quality human resources to serve the administration, operation, and exploitation of invested information systems, especially administrators for the Provincial Data Integration Center and network administration at localities. Adjust the specific investment mechanism for information technology, and strengthen socialization to promote the effectiveness of public-private cooperation in this work. At the same time, it is necessary to organize training, training, exploitation, and use of information systems and use of online public services at levels 3 and 4 for people and businesses. Every year, balance more resources

for the program of development and application of information technology to modernize the administration, in which priority is given to mountainous provinces and provinces with many difficulties.

In addition, citizens must also increase the awareness, qualifications, and information technology skills needed by exploiting and using online public services to increase the rate of online transactions. In particular, they are increasing the mobilization of officials to assist people in entering data directly online when citizens come to submit procedures at the one-stop department or deploying new solutions such as the electronic residential model. Incorporating extra-curricular learning programs in schools and sending volunteers to citizens' homes to support them have also brought practical results.

4.4. Deploy shared database, information system, and core database.

In the coming time, it is necessary to focus on perfecting the construction of national foundational databases, especially the national database on population, land, natural resources, enterprises, people, finance, etc., insurance, and several specialized information systems and databases, such as education, health care, traffic; labor and justice. Thereby ensuring data and information are unified and transparent between the Government and authorities at all levels. At the same time, set up application systems to serve people, businesses, and the Government's management and administration. The Government Office and ministries, branches, and localities must actively deploy the National Public Service Portal and a one-stop electronic information system connecting the Public Service Portal of ministries, departments, and localities. This is a critical system to connect the Government with people and businesses, demonstrating the Government's service spirit.

Ministries, sectors, and localities have gradually invested, implemented, and perfected information technology infrastructure and focused on investing in materials and equipment to improve the work efficiency of cadres and civil servants. Ensure the shared data system goes into stable operation. Connect the WAN network of the province and city to all departments, departments, branches, districts, towns, communes, wards, and townships. In addition, ensure the ratio of computers/officers is raised, the internet connection system is stable to handle online public services in a timely and smooth manner. For localities, it is necessary to promote the upgrading of the Electronic Communication Portal of the Provincial People's Committee to promptly provide information on the People's Committee's operating instructions and as a platform for integrating applications for local everyday use.

4.5. Improve the quality of telecommunications infrastructure, transmission line quality, and network security.

This is an important platform to deploy to facilitate online public administration activities. Regarding digital infrastructure upgrades, the Government and businesses need to urgently prepare plans to deploy 5G services to keep up with the world trend in that 5G-integrated smartphones are being widely popularized with the Internet. The speed is many times higher than the current 4G network. Along with developing technical infrastructure, it is necessary to ensure the safety and confidentiality of personal information in providing online public services. It is essential to ensure preventive measures against risks, such as data theft, incorrect results, modification of information, and tampering. Security measures must be implemented at all access layers to prevent these threats.

5. CONCLUSION

In recent years, state agencies from central to local levels have actively implemented many measures to speed up the process of building and gradually perfecting e-government in general and the online public service delivery system line in particular. However, in the face of the trend of digital transformation with the strong development of technology, it is required that state agencies continue to have more synchronous and comprehensive solutions to catch up and flexibly transform the supply chain. Online public services, and at the same time, strengthen security assurance and network information safety and seize development opportunities in the industrial revolution 4.0 to meet the needs of people and businesses.

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