The stages of digital transformation in records management and archives in current state administrative agencies

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***Abstract:** The current stage of digital transformation is identified as the objective, strategy, and responsibility of all agencies, organizations, enterprises, and citizens. In the operations of each state administrative agency, records management and archives ensure information for management activities. Therefore, digital transformation in document processing and archiving is essential and imperative. However, digital transformation of clerical and archival work does not mean that it can be done immediately, as it takes time and goes through a process with specific stages. This article will further clarify the role and stages of digital transformation of records management and archives in state administrative agencies in the current period.*

***Keywords:** Digital transformation; records management, archives; state administration, state management; e-government; digital government; information technology; archives.*

1. Introduction

In Vietnam, digital transformation began to be extensively discussed in 2018, when this movement surged nationwide. Along with the global development of science and technology, digital technology has impacted all aspects of social life and created a direction for building a synchronized digital government, society, and economy. The Party and the State of Vietnam have set forth strategies and policies for participating in the Technology Revolution 4.0, in which the legal milestone of digital transformation is when the Prime Minister approved the National Digital Transformation Program by 2025, with orientations toward 2030 in Decision 749/QD-TTg on June 3, 2020. It stated "Vietnam becomes a prosperous digital country that pioneers trying out new technologies and models; has completed fundamental and comprehensive reforms in Governmental operation, economic activities of enterprises and the way people live and work, and has

established a safe, civilized and widespread digital environment" (Prime Minister, 2020). This goal necessitates innovation, particularly in the public sector, by transforming the operations of the government and state administrative agencies, promoting a shift from traditional to electronic government, and aiming for a digital government.

Developing e-government towards digital government is an inevitable trend, improving transparency and efficiency in the Government's operations. This is one of the crucial tasks of the whole political system (Prime Minister, 2021). In the government's operations and the field of administrative management, digital transformation accelerates the transition from a traditional to an electronic government towards a digital government, wherein records management and archives constitute a sector within the field of state administrative management. Therefore, implementing digital transformation in records management and archives at state administrative agencies is imperative.

2. The role of digital transformation in records management and archives in state administrative agencies

Records management and archives tasks aim to ensure information management in a methodological, fast, accurate, secure, and legally compliant manner, serving the timely activities of leadership and organizations. The management and operation of leadership regularly utilize reliable information from archived documents and records. Therefore, digital transformation in document processing and archiving is indispensable. This task plays several roles in the activities of state administrative management when building toward an electronic government aimed at a digital government, as follows:

Firstly, digital transformation in records management and archives contributes to building an electronic government, a digital government towards digital governance, a digital government, and smart cities at the local level (Prime Minister, 2021). Digital transformation in records management and archives involves handling paperless tasks, one of the electronic government's four "No's." The four "No's" of the electronic government include processing documents with no paper, meeting with no in-person contact, handling administrative procedures with no contact, and making payments with no cash. This process aims to achieve a digital government with the four "have's", namely having all activities in a digital environment, having the ability to provide new services, having the ability to support decision-making based on data, and having the ability to solve complex problems.

Digital transformation in records management and archives of agencies has formed the entire archival and record-keeping process on a digital technology platform, which involves changes in document creation, transfer, management, archival, and electronic document verification. Digital transformation in records management and archives has contributed to forming a data system within each agency and across administrative levels, interconnected through document exchange systems, e-government portals, and reporting information systems. This shared data system facilitates task resolution and leadership decision-making based on information systems and data (minimizing qualitative information). Therefore, digital transformation in records management and archives with the content "work records processed on the network environment" is identified as one of the three fundamental objectives of the National Digital Transformation Program (Prime Minister, 2020). This can be considered as one of the significant impacts with an essential role in building towards electronic government, digital government, and smart cities at the local level.

Secondly, digital transformation in records management and archives helps to establish an information system, data serving management,

and operation activities. In the operations of state administrative agencies, records management and archives tasks involve establishing, transferring, managing, and preserving information formed during the agency's function and mission execution. The information and data obtained from document processing and archiving activities are crucial factors (input as data and output as management decisions), along with data systems in other specialized departments of the organization, forming a digital data repository.

Table 1: A comparison of information systems before and after digital transformation	
Before digital transformation	**After digital transformation**
The information generated by each individual is formatted differently and stored separately.	The information system is unified in a department, a division, and a unit.
The information is only used in each department, division, and unit.	The information is commonly used among departments, divisions, and units in the agency.
The information of an agency.	The information is connected with many agencies (by vertical sectors or state administrative management agencies).
The information of an administrative level or a sector.	The information is shared and used in the whole administrative system and among sectors.
The information of a sector.	The information is shared with other sectors nationwide.
	Source: Compiled by author

It can be seen that digital transformation in document processing and archiving will unify data in terms of format digitization for all past, present, and future information types in critical agency departments (personnel organization, accounting, specialized operations, etc.) to higher, macro levels (administrative unit, sector, national level), facilitating management activities at all levels. Digital transformation will bypass cumbersome steps, operations, and procedures, saving time in handling tasks, document processing, and archival business processes, laying the groundwork for managing and utilizing information systems from individual entities to extensive, interconnected and unified data systems.

Thirdly, digital transformation in document processing and archiving enhances the effectiveness and efficiency of state administrative management activities. Digital transformation in document processing and archiving involves utilizing new digital platform solutions that help save costs on printing, duplication, document delivery services, etc. Although investing in technology infrastructure incurs significant initial expenses, it can be utilized over a long period, whereas printing and paper duplication are often costly daily. Moreover, digital transformation in document processing and archiving also creates conditions to achieve transparency in information during the management and decision-making process while reducing redundant tasks in the work process and reforming administrative procedures in each agency.

Making legal, rational, and feasible decisions requires information from advisory

departments in management and leadership activities. Providing legal information involves written documents. When undergoing digital transformation, data is digitized and supported by technologies such as AI, the Internet of Things (IoT), etc., for data analysis. At this point, leaders only need to input data requests into the system, which will provide comprehensive data, and some intelligent technologies may even process and transform data, generating new value and objectively providing the required data according to search needs, enabling leaders to make appropriate decisions.
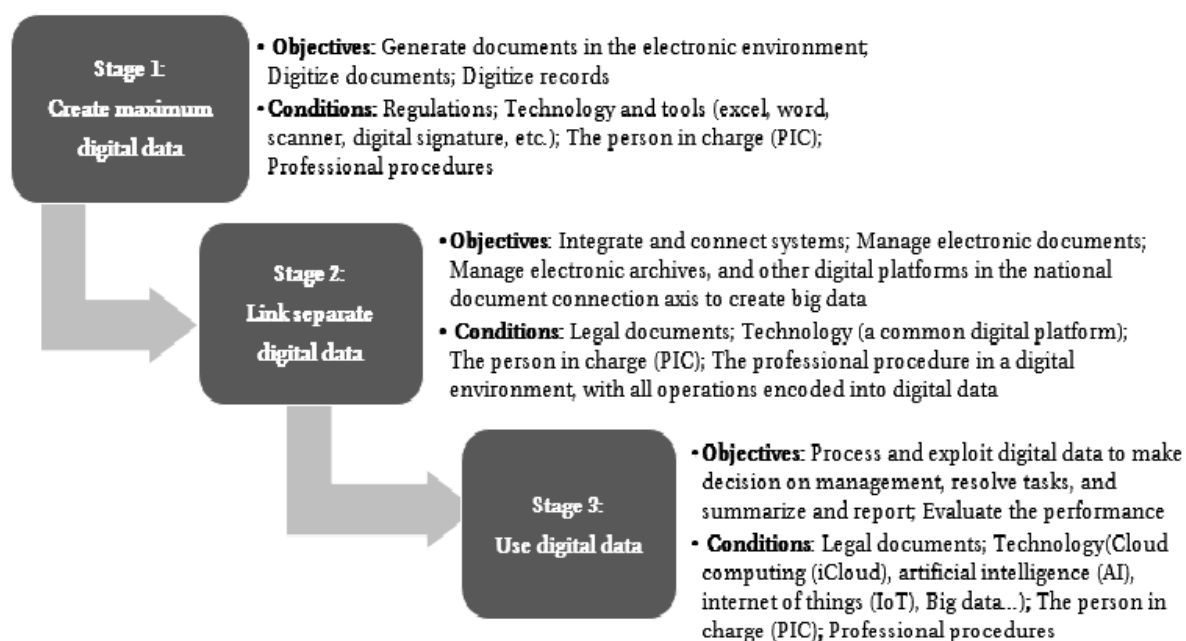
Modern technologies often operate objectively and accurately. All relevant data throughout the document lifecycle is stored systematically and can be checked and observed in various forms and degrees. The responsibilities, obligations, and authorities of individuals and organizations are clearly defined and closely monitored by multiple relevant parties. This entails changing operational methods, leadership styles, work processes, and culture. Therefore, document processing and archiving directly impact the organizational, operational mechanisms, and information connectivity among departments throughout the operation of agencies and the state administrative system and influence new management models.

3. Stages of digital transformation in records management and archives in state administrative agencies

The digital transformation of records management and archives in state administrative agencies is a comprehensive process that involves overall changes in all departments and aspects of document processing and archiving within the state agencies. This process follows a sequential series of steps throughout the lifecycle of documents formed during the activities of state administrative agencies on a digital technology platform - currently, the electronic document management system - to create a digital database serving management and operation activities (Government, 2020).

Diagram 1: Stages of digital transformation in records management and archives in state administrative agencies

- **Stage 1: Create maximum digital data**
  - **Objectives:** Generate documents in the electronic environment; Digitize documents; Digitize records
  - **Conditions:** Regulations; Technology and tools (excel, word, scanner, digital signature, etc.); The person in charge (PIC); Professional procedures

- **Stage 2: Link separate digital data**
  - **Objectives:** Integrate and connect systems; Manage electronic documents; Manage electronic archives, and other digital platforms in the national document connection axis to create big data
  - **Conditions:** Legal documents; Technology (a common digital platform); The person in charge (PIC); The professional procedure in a digital environment, with all operations encoded into digital data

- **Stage 3: Use digital data**
  - **Objectives:** Process and exploit digital data to make decision on management, resolve tasks, and summarize and report; Evaluate the performance
  - **Conditions:** Legal documents; Technology(Cloud computing (iCloud), artificial intelligence (AI), internet of things (IoT), Big data...); The person in charge (PIC); Professional procedures

Source: Compiled by author

The document lifecycle begins with drafting, processing, handling, resolving, managing, and archiving records, documents, and materials within the system platform. Archival tasks are closely associated with documents, information, and data, including electronic documents. Electronic documents can be in electronic format from the outset or digitized from paper documents. Digitized documents from paper documents are electronic documents created through accurate digitization of the content and form of paper documents, with digital signatures from the agencies or organizations performing the digitization (Government, 2020). Archival tasks are associated with electronic records performed on the Electronic Document Management System platform (Ministry of Home Affairs, 2019).

Each stage of the digital transformation of records management and archives clearly defines its objectives and necessary conditions (legal basis, technological infrastructure, human resources, and document processing and archiving procedures) to achieve those objectives.

Stage 1: Application of information technology to maximize digital data creation

This stage aims to optimize the creation of digital data in document processing and archiving. The creation is primarily carried out in two ways:

(1) Generating electronic documents and records directly from initiation.

(2) Digitizing paper-based documents and archival records into electronic formats.

Data creation will commence with each specialized official, agency archivist, and management leadership at various levels when executing their functions and tasks within the agency. The current legal regulations do not allow all documents, records, or files to be generated or digitized into digital formats, as some information or documents still need to

remain in paper format, such as classified documents (which are limited in number). Therefore, in this stage, the focus will be on maximizing the creation of digital data from document processing and archiving tasks.

Stage 2: Utilizing digital technology to integrate individual digital data sources and digitize workflow processes, forming big data

The process of data creation by all public officials throughout all work resolution processes (from document creation, approval, signature, transfer, record creation, submission to agency archives, scientific document organization, and serving digital data exploitation, etc.) will be carried out on digital technology platforms (Management and Operation System; Electronic Document Management System). These digital technology platforms will link digital data together to form a digital data repository within each agency (previously the agency's archive). The digital data repository of each agency, connected with the digital data repositories of other agencies across the entire state administrative system, will create big data. The agency's digital archive, provincial digital archive, and central digital archive linked together will form a massive data block, big data, serving the leadership's management and operation, management at all levels, and other legitimate data exploitation needs of society.

Thus, the entire work process of officials, departments, and units will be conducted in a digital environment, using digital technology to encode workflow processes (drafting documents, submitting documents for approval, digitally signing documents, creating records, submitting records, managing scientific document archives, preserving, online exploitation and use, document authentication, etc.) on the system via personal phones or computers and linking various data sources together (data from agency archives, data from specialized

officials, data from leadership, management at all levels, etc.) to form a massive data block for the agency.

Stage 3: Processing and exploiting digital data to serve specialized work and management activities

Utilizing digital technology such as big data analytics, data management systems, Internet of Things (IoT), cloud computing, artificial intelligence, etc., to process the digital data generated by each official, department, unit, agency, and locality. According to their duties, each official will exploit and use the new database created from individual data to serve management activities such as providing advice, making decisions, rewarding, reporting to superiors, monitoring situations, handling disciplinary violations, etc. (Hanoi University of Social Sciences and Humanities, & Ho Chi Minh City University of Social Sciences and Humanities, 2023).

For example, when agency leaders want to conduct research and make decisions, they only need a computer or smartphone installed with a digital platform and a digital signature and connected to the network. Through data management functions, processing the digital data generated from the Electronic Document Management System of the agency or locality, leaders and officials will be provided with timely and objective information instead of having to study individual reports from each agency or organization for advice.

4. Discussions and conclusions

The deployment of e-government towards a digital government is an inevitable trend to enhance transparency and efficiency in the government's operations. It is one of the crucial tasks of the political system. In implementing this task, the digital transformation of document management and storage in state administrative agencies is indispensable.

Currently, state administrative agencies have been applying information technology to document management. Computers, technological infrastructure, electronic document management software, and electronic document storage management have replaced the traditional processes carried out by officials. This has helped save time and the state budget while being adequate for leaders' management and governance tasks at all levels.

However, despite the existence of policies, legal documents, investment in human resources and information technology infrastructure, and personnel training, the establishment of a database for document management and storage has not yet met the goals set in the National Digital Transformation Program. This needs to be improved to ensure that targets such as "90% of work records at the provincial level, 80% at the district level, and 60% at the commune level are processed in the online environment" can be achieved (Prime Minister, 2020).

The task of document management and storage and its role in state management activities demonstrate the necessity of implementing the digital transformation of document management and storage, along with the stages required during this digital transformation process. Failure to timely undertake this digital transformation can lead to various obstacles in the "artery - information" of the state agency system, such as poorly organized document information management, difficulties in searching and retrieving document information and work records, incomplete records, and inadequate legal validity, hindering legal evidence to protect the rights and legitimate interests of individuals, agencies, and organizations in the state management inspection and supervision activities; challenges in investigating legal violations; and difficulties in maintaining the lifespan and high costs of managing paper-based document archives.

In this article, fundamental perceptions about the role and stages of the digital

transformation of records management and archives in state administrative agencies are provided. This theoretical premise can serve as a basis for further research and practical surveys regarding the digital transformation of records management and archives in each agency, locality, or at the macro level, such as the state administrative system. Further studies may answer some research questions, such as "Where does the digital transformation of records management and archives stand in the national digital transformation roadmap?", "What useful solutions to promote digital transformation more effectively?", or "What are the responsibilities of management agencies and civil servants to meet the requirements of digital transformation of records management and archives?". Determining the actual stage of digital transformation of records management and archives at each agency or organization can provide specific solutions to continue the digital transformation of these tasks, thus contributing to the development of e-government, e-Government towards digital government, and digital government in the future.

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