

The Path of Digital Transformation of Government Services Based on the Perspective of Public Value

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Abstract. With the rapid development of digital technology, the digital transformation of government services has become an important way to enhance the effectiveness of government services and public value. Based on the perspective of public value, this paper discusses the path of digital transformation of government services and its implementation strategy. First, the connotation of public value is defined and its core role in government services is analyzed. Then, the article systematically elaborates the specific paths and implementation steps of the digital transformation of government services through three main paths: technological innovation, policy and regulatory support, and public participation. Finally, it discusses the challenges faced in the transformation process, such as data security, technical barriers and policy lag, and puts forward corresponding countermeasure suggestions. The research in this paper aims to provide government departments with theoretical support and practical guidance for digital transformation, promote the innovation and optimization of the government service system, and further realize the enhancement of public value.

Keywords: Public value, government service, digital transformation, government innovation, e-government.

1. Introduction

Against the backdrop of the ever-changing development of information technology, government departments are facing unprecedented opportunities and challenges in improving the efficiency and quality of public services [1]. Digital transformation of government services, as an innovative tool, can not only improve administrative efficiency, but also enhance government transparency and public trust [2]. How to effectively promote the digital transformation of government services remains an important issue that needs to be urgently addressed by the government and academia.

Public value, as the core concept of government services, emphasizes the maximization of public interest and the rational allocation of social resources [3]. With the continuous penetration of digital technology, how to maximize public value in the digital transformation of government services has become a key issue in government decision-making and management [4]. Based on the public value perspective, the digital transformation of government services should not only focus on the application of technology and the improvement of efficiency but also pay attention to the fairness and transparency of services and the deepening of public participation.

This article aims to systematically explore the path and strategy of digital transformation of government services from the perspective of public value [5]. The article will briefly review the theoretical foundation of public value and its relationship with the digital transformation of government services [6]. It will focus on analyzing the three transformation paths of technological innovation, policy and regulatory support, and public participation, and discussing their important roles in practical application. The article will discuss the challenges that may be faced in the process of digital transformation and propose targeted countermeasures. Through the in-depth analysis of the digital transformation paths of government services, this article expects to provide government policymakers and related researchers with theoretical basis and practical guidance, to promote the optimization and upgrading of the government service system, and to achieve more efficient, transparent and fair public services.

2. Overview of the digital transformation of government services under the perspective of public value

Public value, as a theoretical framework, emphasizes that the government should prioritize the needs and interests of the public when providing services [7]. It covers not only economic efficiency, but also factors such as social equity, transparency and democratic participation. The core of public value lies in realizing the common well-being of society through effective public policies and services [8]. In the digital transformation of government services, the public value perspective requires the government to promote technological innovation and digital applications while always adhering to the principle of the public interest being paramount to ensure that the fruits of digital transformation can truly benefit society and the public. Calculating data security risk:

$$R = \frac{P \cdot I}{A} \quad (1)$$

With the rapid development of information technology, digital transformation has gradually become the main means for governments around the world to improve governance effectiveness and service quality [9]. The digitization of government services not only improves administrative efficiency, but also enhances government transparency, promotes public participation and improves people's satisfaction. Especially under the impetus of big data, artificial intelligence, cloud computing and other technologies, government decision-making and services are gradually shifting from the traditional offline mode to online platforms, and the efficiency and quality of government services have been greatly improved [10]. Through this transformation government services provide convenient services for the public while also achieving the optimal allocation of resources and the enhancement of social governance capacity, shown in Figure 1 :

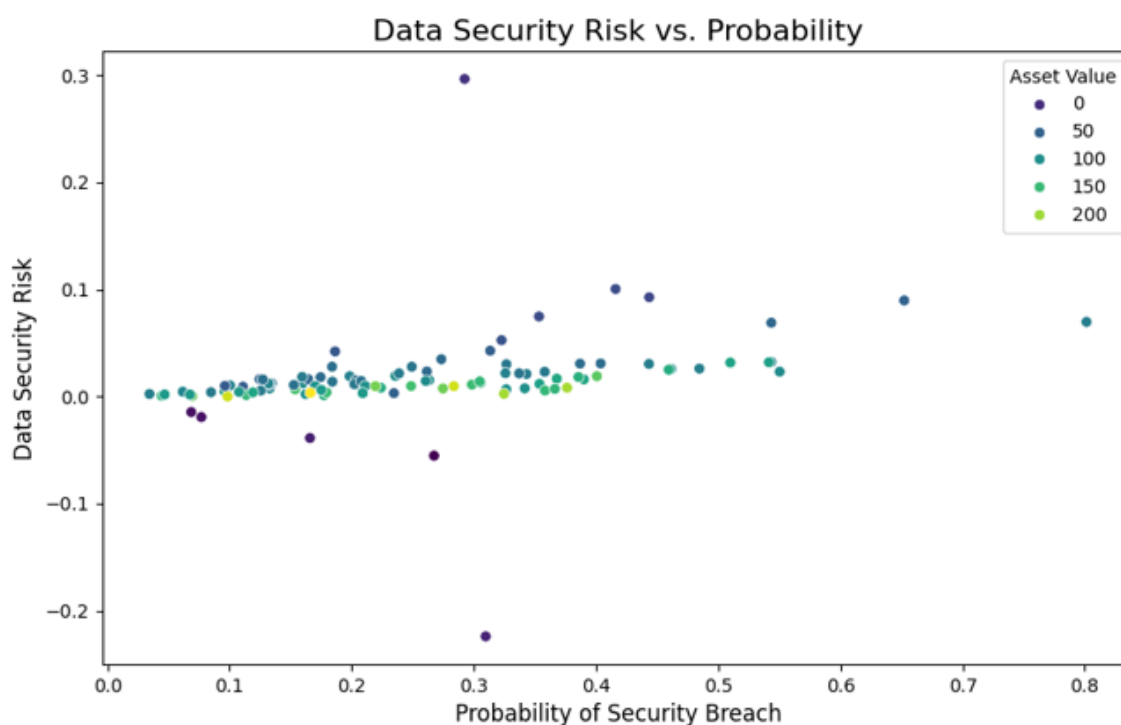


Figure 1. Data Security Risk vs. Probability.

The public value perspective requires that the digital transformation of government services not only pursue the application of technology and efficiency improvement but also pay more attention to how to maximize the public interest through these technologies. Under this perspective, the digital transformation of government services should focus on the integration of elements such as fairness, transparency and public participation. Digital transformation is not just about moving traditional services online, but also about providing services with full consideration of how to optimize resource allocation, narrow the digital divide, and improve people's sense of participation and access. Through

big data analysis, the government is able to understand the needs of the people more accurately and thus provide more personalized and precise public services.

From the perspective of public value, the digital transformation of government services should not only promote the improvement of service effectiveness, but also focus on building a fair, transparent and efficient government service system. The core objective of the transformation is to break down the barriers in the traditional administrative model through the application of information technology and realize more efficient interaction and communication between the government and the public. Through digital transformation, the government is able to better serve the public, solve social and public problems, and improve governance capacity to achieve sustainable social development. The digital transformation of government services under the perspective of public value is not only a technological advancement, but also an innovation and transformation of governance concepts and service methods.

3. The main path of digital transformation of government services

The main path of digital transformation of government services can be developed from three aspects: first, the transformation path driven by technological innovation, through the introduction of advanced digital technologies such as big data, cloud computing and artificial intelligence, to promote the intelligence and efficiency of government services; second, the transformation path supported by policies and regulations, the establishment of a sound policy framework for digital transformation and legal safeguards at the government level, in order to provide institutional support for the smooth digitization of government services; finally, public participation, to provide institutional support; and finally, public participation, to provide institutional support for the smooth digitization of government services. Finally, the transformation path of public participation and feedback mechanism, through strengthening the public's sense of participation and feedback mechanism, to ensure that the digital transformation of government services can truly respond to the needs of the public and enhance the transparency and fairness of public services. These three paths work together to provide comprehensive support and guarantee for the digital transformation of government services.

3.1. Transformation Path Driven by Technological Innovation

The transformation path driven by technological innovation is one of the core driving forces for the digital transformation of government services. First of all, the introduction of digital technology provides strong technical support for government services. The wide application of emerging technologies such as big data, artificial intelligence and cloud computing has promoted the intelligence and efficiency of government services. Through big data analysis, the government can more accurately grasp social needs and people's behavior and provide personalized public services; the introduction of artificial intelligence enables the government to improve administrative efficiency and reduce human errors through intelligent decision support. Evaluating the efficiency of digital services:

$$E = \frac{S}{T} \quad (2)$$

Data sharing and interconnection are a key part of the transformation path of technological innovation. Under the traditional government mode, the information silo phenomenon of various departments is serious, leading to repeated data collection and resource waste. By promoting the construction of a data sharing platform, government departments can realize data interconnection and sharing of real-time updated information to improve the quality and efficiency of public services. This mode of information sharing not only breaks down the information barriers between departments, but also promotes the synergy of government work processes and improves administrative efficiency, shown in Figure 2 :

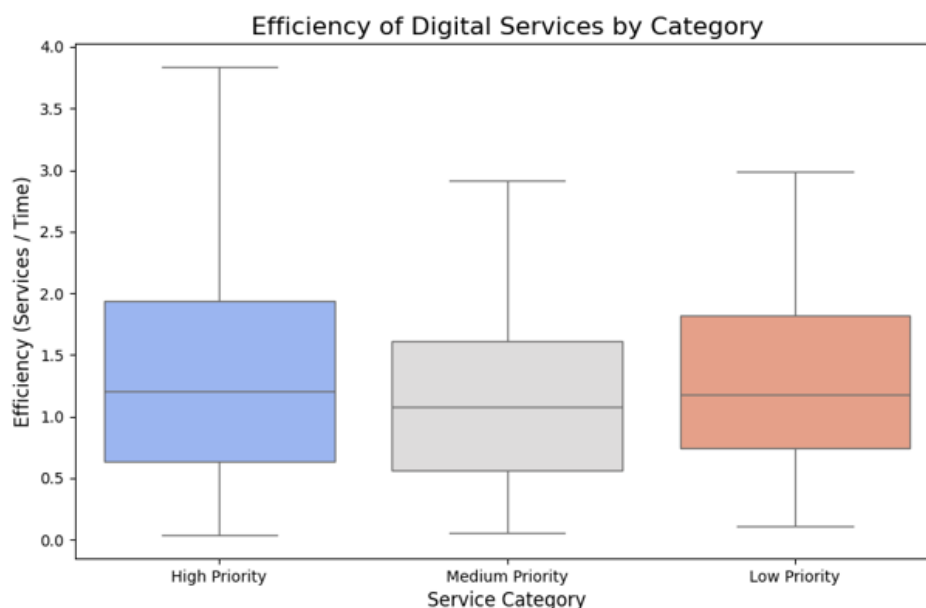


Figure 2. Efficiency of Digital Services by Category.

The realization of intelligent government services greatly enhances the convenience and efficiency of government services. The application of artificial intelligence technology in government services, such as intelligent customer service, online consultation, and automatic examination and approval, greatly reduces manual intervention and improves efficiency and accuracy. Intelligent services allow people to enjoy efficient government services anytime, anywhere, enhancing their satisfaction and engagement. Intelligence also promotes the application of government departments in decision support systems, helping governments better formulate policies and optimize service processes through real-time data analysis.

Technological innovation is a process of continuous evolution, and the digital transformation of government services also requires continuous follow-up on the application and optimization of new technologies. The use of blockchain technology can ensure data security and transparency, while 5G technology can improve the speed and reliability of data transmission, making the response time of government services shorter and more efficient. In order to adapt to these rapidly evolving technologies, the government should establish a mechanism for continuous innovation, strengthen cooperation with scientific research institutions and technology enterprises, and continuously promote technological updating and application optimization to ensure that government services can keep pace with the times and meet the growing public demand.

3.2. Transformation Path Supported by Policies and Regulations

The transformation path supported by policies and regulations is one of the most important guarantees for the digital transformation of government services. First of all, the government should provide guidance for the digitalization of government services by formulating a clear digital transformation policy. The formulation of policies should cover the goals, paths and steps of digital transformation, and provide a concrete framework for action by government departments and related organizations at all levels. Policies should also pay attention to the technical, personnel and resource problems that may arise in the process of digital transformation and propose practical solutions to ensure the smooth implementation of the transformation process.

Second, a sound system of laws and regulations is crucial to ensuring the smooth progress of digital transformation of government services. Digital transformation involves the collection, storage and use of a large amount of sensitive data, and there must be perfect legal safeguards to ensure data security and privacy protection. The government should introduce relevant laws and regulations to regulate the collection and use of data and prevent data leakage and abuse. The legal framework

should also promote government transparency and public accountability to ensure that the rights and interests of all parties in the digital transformation process are equally protected.

Furthermore, policies and regulations should encourage innovation and cooperation, and promote cooperation and co-construction among governments, enterprises and social organizations. The digital transformation of government services requires not only government leadership, but also the collaborative participation of all parties. Policies should encourage technological innovation through incentives and support the application of the public-private partnership (PPP) model to promote in-depth cooperation between the government and technology enterprises and academic institutions. Policies should also provide legal protection for cross-departmental and cross-disciplinary digital services, promote the integration and synergy of government services, and further enhance service efficiency and quality.

Finally, the role of policies and regulations in digital transformation is not only to regulate and safeguard, but also to provide support for public participation. In the process of digital transformation, public participation is an important factor in enhancing service quality and transparency. The government should encourage the public to actively participate in the design and feedback of government services through the policy framework and promote more humanized and personalized government services. Relevant regulations should safeguard the public's right to participate and supervise on digital platforms to ensure that the digital transformation of government services can truly reflect public value and enhance people's sense of access and satisfaction.

3.3. Transformation Path of Public Engagement and Feedback Mechanism

The transformation path of public participation and feedback mechanism is one of the key links in the digital transformation of government services. First of all, enhancing awareness and channels of public participation is the foundation of transformation. The traditional government service model usually has information asymmetry between the public and the government, which makes it difficult for the public to directly participate in the policy making and service process. Digital transformation provides more opportunities and platforms for the government. Through digital means such as online surveys, opinion collection, community forums, etc., the government can listen to the public's opinions more extensively and enhance the public's sense of participation and identification with government services. Open data and information sharing also provide the basis for public participation, and the public can understand the policy background, decision-making process and service content through transparent government data.

In the process of digital transformation of government services, the establishment of an effective feedback mechanism is an important means to improve service quality. The government should establish convenient feedback channels through digital platforms so that the public can submit suggestions, complaints and feedback at any time. With the support of big data and artificial intelligence technology, the government can intelligently analyze a large amount of people's feedback, identify problems and respond in a timely manner. By reviewing and optimizing the feedback mechanism on a regular basis, the government can ensure that the public's voice is given due attention and further improve the transparency and fairness of government services.

The government needs to promote interaction and cooperation between the public and the government through digital means. Digital transformation enables governments to exchange information with the public more efficiently, not only limited to one-way policy releases, but also enabling two-way communication through tools such as social media, online questionnaires, and virtual government platforms. The public is not only able to raise issues and demands, but also to participate in the process of designing and improving services. The government can invite the public and experts to discuss the optimization of policies and services by opening online seminars and hearings, etc. This interactive and cooperative mechanism can effectively enhance the scientific nature of government decisions and the accuracy of services.

Finally, the transformation of the public participation and feedback mechanism also requires the government to strengthen the protection of people's privacy and data security in the digitization

process. With the advancement of data management, people's personal information and feedback data are increasing, and how to protect their security and privacy has become a major concern in the process of public participation. The government should protect the public's personal information through sound laws and regulations and implement strict data security measures on government service platforms to ensure that the public can express their opinions without fear of privacy leakage during the participation and feedback process. By establishing sound privacy protection and data security mechanisms, the government can win the trust of the public and thus better promote the digital transformation of government services.

4. Challenges and Countermeasures for Digital Transformation of Government Services

While the digital transformation of government services brings many opportunities, it also faces a number of challenges. First, the lack of technological infrastructure is a notable issue. Although many cities and regions have begun to implement digital government services, the technical infrastructure is still weak in many places due to the differences in economic development and technological levels in different regions. Problems such as insufficient network coverage and old hardware equipment in some remote areas have led to limitations in the process of digitizing government services. The government needs to increase investment in infrastructure, especially accelerating the construction of network facilities, to ensure that every region can enjoy equal digital services.

Data security and privacy protection issues are another major challenge to digital transformation. The process of digitizing government services will involve the collection, transmission and storage of a large amount of sensitive information, such as citizens' personal information and financial information. If these data are leaked or misused, it will not only infringe on people's privacy but also undermine the credibility of the government. The government must strengthen data security management and improve relevant laws and regulations to ensure data security. The public's awareness of privacy protection should also be raised to enhance the public's trust in the government's digital platform.

Digital transformation also faces the problem of organizational and personnel adaptability. Many government departments and staff have operated under the traditional model for many years and lack experience in digital operations. During the transformation process, staff may face difficulties such as lack of technical skills and inertia in traditional work processes, which will affect the transformation process. The government should step up training for civil servants to improve their ability to apply digital technology and optimize the process of government services to promote the digital transformation of the overall administrative system. For grassroots governments, special financial support should also be provided to help them overcome technical and personnel difficulties.

The public's digital literacy and participation awareness may also be an obstacle to transformation. Particularly among some low-income groups and the elderly, digital literacy is low, leading to difficulties in using government service platforms. To bridge this digital divide, the government should take measures to improve the public's digital literacy and conduct relevant training and awareness-raising activities to help people better adapt to digital government services. The government should also provide traditional service pathways for those who are unfamiliar with digital platforms to ensure that everyone can enjoy equal access to government services.

5. Conclusion

The digital transformation of government services is an important way to improve the government's governance capacity and the quality of public services, which can effectively promote government transparency, efficiency and service quality. Challenges in the transformation process should not be overlooked, including insufficient technological infrastructure, risks in data security and privacy protection, organizational and personnel adaptability issues, and public digital literacy.

In promoting digital transformation, the government needs to work on various aspects, such as technological innovation, policies and regulations, public participation and feedback mechanisms, and formulate practical measures to ensure the smooth progress of the transformation process.

The government should strengthen infrastructure construction, enhance data security protection capabilities, and help government departments and the public adapt to digital transformation through policy support and training measures. In terms of data security, privacy protection and public participation, the government needs to provide all-round protection and support, establish a more transparent and efficient service mechanism, and promote interaction and cooperation between the public and the government. Through continuous innovation and optimization, the digital transformation of government services will play a more active role in improving the quality of public services and modernizing government governance.

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