



Analysing Dilemmas and Cracks in Digital Government Governance Based on the TOE Model

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Abstract. In the era of big data, digital government, as a governance model using digital technology innovation, aims to maximise government efficiency, improve government responsiveness, and promote the rule of law in the governance process. In this paper, we use the TOE framework to analyse the government's problems in digital governance in terms of e-government operation, intra-government organisational communication, policies and regulations, and finance, and put forward optimisation suggestions. This will enhance the governance performance of the digital government, build a good administrative ecosystem for the whole process of the digital government in an all-round way, ultimately realise the enhancement of the government's governance effectiveness, and provide theoretical reference for the development of effective governance of China's digital government.

Keywords: digital government; government governance; TOE model

1 Introduction

Driven by the national big data strategy, the level of government digitisation has become a new focus of international competition. Digital government governance is highly valued as an important way to modernise the governance system and governance capacity^[1]. The Fourth Plenary Session of the 19th CPC Central Committee first proposed to promote digital government governance, the Fifth Plenary Session emphasised to enhance the level of digital intelligence, and the 20th CPC Central Committee further clarified the goal of building a strong network country and a digital China.2022 In September, the State Council issued the Guidelines for the Construction of a Nationally Integrated Big Data System for Governmental Affairs, which pointed out the direction of the construction of digital government, and it has become an inevitable trend to strengthen the application of digital technology in governance^[2]. Therefore, giving full play to the governance capacity of digital government is a key initiative to promote the modernisation of national governance and accelerate the construction of digital China.

2 Connotation and Analysis of the TOE Framework

In 1990, Tornatzky and Fleischer proposed the TOE model, pointing out that organisations applying innovative technologies are influenced by three factors: technology, organisation and environment^[3]. In recent years, the framework has been widely used in the study of government digital governance, covering the fields of government websites, digital government, open government data and diffusion of innovation in information systems. Based on the TOE framework, this paper launches the study of digital government governance from the following three aspects: firstly, technical factors, focusing on the technical requirements of digital devices and network security; secondly, organisational factors, involving the system of authority and responsibility, management levels, management ranges, and the division of labour between sections, etc. This paper focuses on the information communication and the division of responsibility in government organisations; thirdly, environmental factors, emphasising the interaction between the external environment and internal factors. Combined with China's practice, this paper constructs an analytical framework (see Figure 1).

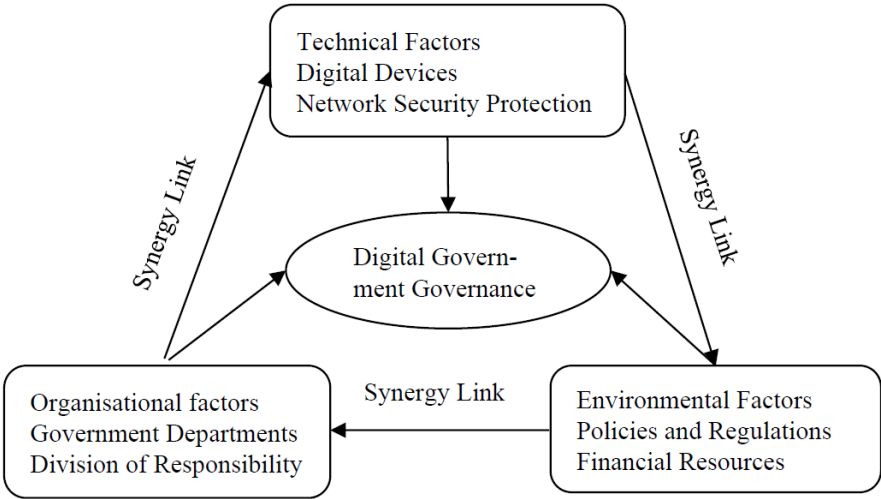


Fig. 1. Digital Government Governance TOE Analytical Framework.

3 Realistic Dilemmas in Digital Government Governance

The emergence of digital government has provided governments with more efficient and convenient ways to deliver services, enabling them to better meet the needs of citizens and businesses, and enhancing their transparency and accountability. However, the ensuing development of digital government has also brought about a new set of challenges and dilemmas^[4].

3.1 Difficulties in the Operation of E-government Platforms

3.1.1 Inability to have Full Coverage of Digital Equipment

Some regions and populations may face a digital divide due to the unequal distribution of digital devices, networks and skills. This digital divide may exacerbate social inequalities by denying some parts of the population access to digital government services. In some remote or economically underdeveloped areas, many residents do not have access to high-quality digital devices or even to the Internet. This prevents residents in these areas from enjoying the convenience of digital government services, thus missing out on many convenient public services.

3.1.2 Inadequate Network Security Protection

At present, governments at all levels have not yet established a comprehensive cybersecurity system and face internal and external threats. There is an internal risk of information leakage, inadequate security management technology and system vulnerabilities that may lead to cybersecurity incidents. The institutional system is not rigorous and lacks a complete internal management system, leading to unclear departmental responsibilities, inconsistent standards and weak management capacity, which increases the likelihood of cybersecurity incidents.

3.2 Poor Communication of Information Between Government Departments

3.2.1 Difficulty in Data Collaboration and Sharing

Although the integrated provincial and municipal data platforms have been built, the main body of data governance is still the business function departments, and it is difficult to break down the departmental barriers, forming a relatively unified and absolutely fragmented data management phenomenon. Collaboration and information sharing among departments within the government has become difficult, creating information silos and affecting the efficiency and transparency of overall government governance.

3.2.2 Unclear Division of Labour Among Departments

Difficulty in integration and co-ordination and unclear division of responsibilities in governance across government organisations leads to a range of challenges in the government governance system, including inefficiency, lagging decision-making and waste of resources. Lack of integration and co-ordination can lead to information silos and wasted resources. Different government departments are often responsible for the management of specific areas or issues, but due to the lack of effective communication and coordination mechanisms, information cannot be shared adequately, making it difficult to form effective cooperation and coordination between different departments.

3.3 Lack of Policies, Regulations and Financial Support

3.3.1 Inadequate Government Policies and Regulations

At this stage, there are relatively few normative documents and policies and regulations on digital government governance in China, and no specific and unified norms have been formed on the relevant details of promoting the digital government governance process, resulting in inconsistent governance methods and standards, and increasing the complexity of management. At the same time, the lack of support from government policies and laws and regulations makes it difficult to sustain the development and improvement of digital government projects, which affects the long-term effect of digital governance.

3.3.2 Lack of Financial Resources

The construction of digital governance projects requires a large amount of resources to be invested in the construction of technical infrastructure, data collection and analysis, and personnel training. However, the current financial support from all levels of government in China is far from adequate, making it difficult to achieve a comprehensive digital transformation, causing obstacles to the advancement of the information technology construction process, limiting the innovation and development of digital governance projects, and missing opportunities to improve governance effectiveness and the quality of public services.

4 Digital Government Governance Crackdown

Although digital government governance has become the key to digital transformation everywhere, it still faces various contradictions and governance dilemmas, so it is necessary to optimize and improve digital government governance from the three aspects of technology, organization and environment, so that the ‘technology-organization-environment’ system of the government's digital governance capacity optimizes the original equilibrium state, and realizes the linkage improvement of the government's digital governance capacity. ‘system optimisation of the original equilibrium state, to achieve the linkage of the government digital governance capacity to improve^[5].

4.1 Robust E-government Operating Platform

4.1.1 Increased Investment in Technology

Addressing the digital divide requires governments to invest more in infrastructure to increase the coverage of digital devices and networks in remote and impoverished areas, as well as to strengthen the training and popularisation of digital skills to ensure that every citizen has equal access to the services provided by the digital government in order to promote social equity and inclusion.

4.1.2 Strengthening Network Security Protection

In response to the internal and external network security dilemma of the government, the government should strengthen the protection of sensitive information, establish a complete internal network security management system, regulate the duties and standards of government departments, improve management capabilities and technical level, increase network security investment, improve the security and defence capability of the government's network system to ensure that the government's internal network system is free from the threat of attacks and information leakage.

4.2 Strengthening Government Organisation and Implementation

4.2.1 Optimising the Operation Mechanism for Scientific Decision-making

In the governance of government organisations, it is necessary to build a clearly oriented and fine-tuned leadership team responsible for integrating the overall situation and coordinating the promotion of major issues in digital government governance; optimise the set-up of institutions for digital government governance, clarify the responsibilities of each person, and enhance the efficiency of administrative operations; and set up local expert consulting bodies for the construction of 'digital government'.

4.2.2 Sound Integration and Co-ordination Mechanism

The Government should establish an effective integration and co-ordination mechanism to clarify the responsibilities and boundaries of authority and responsibility of various departments. An interdepartmental coordinating body or committee can be set up to coordinate the cooperation and collaboration of various departments in governance and to form holistic governance programmes and policies. In addition, the Government should strengthen information-sharing and communication channels to ensure a smooth flow of information between departments and improve the accuracy and timeliness of information.

4.3 Improving Laws and Regulations and Increasing Financial Resources

4.3.1 Formulating Policies and Regulations

The government should formulate clear policies and regulations on digital government governance, specify governance objectives, principles and standards, provide resource support and clear management responsibilities, strengthen supervision, formulate regulations on privacy protection and information security, promote data sharing and interoperability, establish mechanisms and channels for public participation, and improve transparency and public trust in digital governance.

4.3.2 Increasing Financial Investment

To solve the problem of lack of financial support for digital government governance, the government should increase financial investment and provide special funds for the promotion of digital governance projects to ensure the expansion of their scale and

scope. Secondly, it should cooperate with enterprises and social organisations to introduce social capital to participate in the construction and operation of digital governance projects, so as to increase the financial sources of the projects.

5 Conclusion

In the contemporary social context of the sweeping wave of big data, the construction of a digital government has become an inevitable trend and core demand to promote the transformation of government governance to intelligence and precision. This study applies the Technology-Organisation-Environment (TOE) model to deeply analyse the capabilities of digital governments, deconstruct their governance status and challenges from the three levels of technology, organisational structure and external environment, and propose optimisation strategies. However, there are limitations in the study: the theoretical framework is not embedded in the implementation design of specific technology platforms, and there is a lack of feasibility demonstration. Future research needs to deepen the integration of the theoretical system and technological practice to build a comprehensive and systematic digital government governance system.

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