

Technology empowerment or technology negativity: The Two Sides of Digital Government Construction

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Abstract. With the development of the socialist market economy and the requirements of the modernization of social governance, the construction of digital government requires the government to actively establish the communication and sharing mechanism within the government, so that the information barriers existing within the government organs are gradually being broken, and the "technical dividends" are released. However, the problem of "compatibility" between the long-term government structure and the construction paradigm of digital government in China makes it difficult for technology embedding to achieve the desired effect, and the expectation of "technology empowerment" is often replaced by the reality of "technology negative energy". Taking the innovative practice of digital government construction in district a of S City - the integrated center as an example, this paper analyzes the two sides of the application of technology in social governance, and analyzes the practical path of expanding the effect of "empowerment" and reducing the impact of "negative energy" from the two aspects of "hard technology" of rational use of platform data and "soft technology" of optimizing and improving the mechanism concept, in order to avoid technology processing and improve social governance.

Keywords: Technology empowerment, Technology negativity, Digital government.

1. Introduction

At the end of the 19th century and the beginning of the 20th century, the emergence of the bureaucracy was a significant change in the governmental structure. The bureaucracy became an administrative system, and countries are eager to emulate due to its accuracy, efficiency, and homogeneity. Through the establishment of impersonal characteristics, the bureaucratic system gradually eliminates the disadvantages of the traditional administrative system, such as low efficiency and the principle of "setting things up according to people". So, it has become an important symbol of the modernization of government governance. With the development of the socialist market economy and the modernization requirements of social governance, the traditional governance structure has resulted in the "gap" between governments. The shortcomings of the bureaucratic system urgently need to be compensated by new means, and the emergence of information technology has gradually become an important starting point to alleviate this problem. Information technique has the characteristics of "Boundlessness" and "accuracy". The construction of digital government in the new era requires the government to actively establish a communication and sharing mechanism to form a governance network for data integration. So, the information barriers within government agencies is gradually be worn out, and a "data dividend" is released[1-3].

The construction of "smarter cities" is an essential way to foster the modernization of urban governance systems and governance capabilities. In 2020, the Central Committee of CPC pointed out, "Strengthen the construction of digital society and digital government and improve the level of digital intelligence, such as public service and social governance. " In this context, many places actively take digital government construction as the starting point, adhere to the important idea of "governing cities by technology" to improve the governance efficiency and residents' happiness. By actively "localizing" digital government construction, many distinctive platforms have been built to improve the governance level.

Nevertheless, due to the heterogeneity or even exclusivity of the government structure and the construction paradigm of digital government in terms of "operating mechanism" and "operating concept", it is difficult for technology embedding to achieve the optimum effect, and the expectation

of "technological empowerment" is often replaced by the reality of "technology negativity". From the perspective of technical rationality, the "refinement" and "digitization" of performance evaluation have brought new business pressures to the staffs. And blocked communication channels among departments have also caused residents' demands to fall into the dilemma of "administrative idling". In the process of "integration", the governance efficiency has been stagnant, which is easy to cause a "technical paradox". The modernization of social governance means the efficient provision of public services and the effective play of public value. Faced with the fact that bureaucracy is still the main organizational form of the government, how to understand the empowering value of technology and the phenomenon of "technology negativity" in the construction of digital government, how to play the function of "technology shortens the governance route " and fill the "gap", and how to reduce the phenomenon of "involution" in governance are the complicated problems from now on, which is also the meaning of this research.

2. Literature Review

2.1 The Process of Digital Government Construction

In the 1990s, the continuous integration of the Internet and the commercial field changed the organization mode and profit of the private sector, thus improving the efficiency of service providing. At the same time, this kind of demand also emerged in the government. By the end of the 1990s, the rapid changes in technology began to impact government organizations. Osborne and Gaebler believed that the bureaucracy designed in the early stage had been difficult to function well in the information explosion and knowledge-intensive social economy. The technological revolution is essential for the government to adapt to this changing trend. The "Direct Government" plan released by the United Kingdom in 1996 clarified the government reform path to provide public services using electronic and information technology.

With the advent of the fourth technological revolution characterized by emerging technologies such as the Internet, big data, and artificial intelligence, society's rapid informatization and digitization have become the core issue of global governance. In 2012, both the United Kingdom and the United States released national strategies for establishing a "digital government" and improving the management efficiency. The role of information technology in reshaping the government is another stage of the new public management movement in the West. It has profound implications for reforming the internal and external relations of the government, realizing service delivery and public participation.

Since the beginning of the 21st century, driven by the globalization of information technology, the technology-driven strategy has accelerated China's leading role in technological innovation and has left a significant "China" in the fourth technological revolution. The management model of China's government departments is also undergoing rapid changes in line with this trend. The 14th Five-Year Plan in 2020 will "strengthen the construction of a digital society, and improve the level of digital intelligence such as public services and social governance", which is crucial for socialist modernization. In 2021, with the country's proposal to promote the "Internet plus grassroots governance ", accelerating the construction of digital government has become important for the modernization of the national governance system.

2.2 The Value of Digital Government Construction

2.2.1 Internal Environment of Government

The construction of a digital government is essentially a breakthrough in the governance bottleneck and dilemma brought by the bureaucratic system, and it's also an important measure for self-adjusting organizational forms. Technological determinism believes that information technology is the key to realize governmental change. Jane Fountain discusses the potential of IT to redistribute government power and responsibilities as well as to implement overall control between departments within an

organization. The importance of digital government has been generally recognized by the academic field and has been widely confirmed through local case and statistical analysis.

2.2.2 External Environment of Government

The key point of digital government construction is to improve the social benefits by optimizing government functions, and establish an efficient government-social interaction mechanism. On the one hand, digital government is an accelerator for socio-economic development. Jiang Xiaojuan pointed out that big data promotes the gradual expansion of the government's advantages in supporting economic regulation and market supervision and improving the level of social management. On the other hand, the empowerment and empowerment of multiple subjects in building a digital government is a process of sharing the right to speak. With the continuous advancement of the "networking" and "digitalization" of social life, the digital government has become the future form. This new form includes information technology embedded in government departments and re-engineering of organization. Simultaneously, it has also intensified the relationship between the government and the public, the government and the market, and the government and the society from a multi-dimensional perspective.

2.3 Technological Paradox in The Context of Digital Government Construction

Technology paradox refers to the introduction of information technology that has not achieved the intended purpose but has induced many unintended consequences and impacts. The background of digital government construction is the rise of big data, cloud computing, and Internet platforms brought about by The fourth technological revolution. However, as typical representatives of bureaucratic institutions, the government and other public departments have solid institutional inertia that will result in a "secondary transformation" of technology. Through the inherent bureaucratic force, the value of technology is embedded in the existing ideology and execution models to a certain extent. The integration between traditional systems and emerging technologies requires a long-term adaptation process, and there is a phenomenon of "technological burden" in this stage. Magris and others believe that the role of the Internet is to reflect and enhance the behaviour of the real world, not to change the political and civic affairs in the real world. In the process of actively carrying out digital construction by local governments in China, it is easy to generate "technological optimism", and social management through the establishment of dazzling intelligent platforms is an important manifestation of the government's "lazy politics". The transformation of subtle social facts into simple and operational information symbols often leads to the loss of valuable information. The concept that digital government construction is only equivalent to technological investment results in the continuous "involution" of social governance. Technology itself will also bring new work tasks and pressures. The "red tape" of information governance technology and new bureaucratic formalism impose compliance burdens on civil servants, limit their choices, and lead to inefficiency in their work, which will harm interests.

3. Technology Empowerment: The Practical Effect of the Integrated Command Center in District A of S City

Empowerment initially originated from "empower" in management, which generally refers to the positive meaning and value. Technological empowerment mainly refers to the government's use of platforms, data and relevant technical elements under technical rationality to carry out technological changes through institutional systems. Absorbing and improving governance capabilities is the key to digital government construction. As a prefecture-level city, City S has long been at the forefront of the country's economic development. The developed industrial economy and the rapid urbanization process have posed higher challenges to urban governance. Local governments have solid demands for social governance innovation and have sufficient financial resources to provide a guarantee for the construction of digital government.

The "Integrated Command Centre" in District A of S City was officially established on May 20, 2020. By building a large-scale intelligent platform, all information within the jurisdiction can be "visualized" on the intelligent platform, and real-time monitoring and dynamic analysis can be used to achieve regional governance. At the same time, the "integrated command centre" plays the role of "gateway" ("one needle"), actively adapts to the business at the city and district level ("thousand lines"), and distributes the business to the corresponding streets and towns after unified processing through the platform. Up to now, the optimization and construction project of the "Centre" has been completed, and a "super-powerful brain" with data communication, complete functions and an excellent system is exerting practical effects in the daily life of the residents of S City, further improving people's livelihood and well-being, and promoting the realization of high-quality urban construction.

3.1 Macroscopic Perception of Social Appearance

3.1.1 Spatial Perception System and Urban "Hard Environment"

There is a specific positive correlation between the acceleration of urbanization and the increase of urban risks. Personal safety problems caused by high-altitude parabolic objects, urban water-logging caused by urban ground hardening and traffic accidents caused by the increase in car ownership are redefining the meaning of urban risk. Dynamic analysis of complex social landscapes through technological empowerment has become necessary for government departments to address this challenge. The "centre" in S city has 40 grid processing systems, 7 high-altitude observations and 42 ground monitoring equipment in order to collect and monitor the real-time picture of the "hard environment" of the space through module switching to ensure the efficiency of risk warning. By establishing a region-wide real-time monitoring and intelligent warning system based on "horizontal integration and vertical connection" in urban space, the "centre" has further extended the tentacles of risk perception and serves grassroots social governance.

3.1.2 Social Perception Port and Urban "Soft Environment"

Residents' demands are the front-end "tentacles" of urban social governance and an important basis for the government's scientific decision-making. The livelihood issues presented in various appeal platforms accurately reflect the overall value orientation of society and the "soft environment" of social governance. For the government, through integration and analysis, various digital public opinion platforms are expected to become the "database" of the government and all parties in the society and assume the role of policy "think tank". The "centre" has established close relationships with higher-level government departments and acts as a "gateway" to import public opinion information in the region. The professional handling of agents can accurately accept various people's livelihood demands. It has become the critical media for citizens to integrate into the social governance community and the bridge between the government and society. It also provides an essential basis for the government to fully understand urban governance's difficulties and pain points and implement scientific and precise social management.

3.2 Mesoscopic linkage of Horizontal and Vertical Subjects

The digital government is committed to developing the "flattening" of the government system based on the linkage of horizontal and vertical departments. It uses the "platform" to drive multiple subjects to participate in social governance, integrate collective wisdom, and coordinate the management system to move towards the development of the "integral government" stage.

As the first "integrated" construction platform established in S city, the "centre" system construction achieves the two-way integration of horizontal and vertical. In terms of horizontal construction integration, efforts are made to promote the entry of 53 department offices and some state-owned enterprises so that information resources can be handled in a unified manner. In terms of vertical integration, the "centre" adheres to the principle of "one platform, four levels to use", and can be directly displayed on the mobile phones of the township-level grid personnel. Through the

"integration" of tools, the concentration of all "lines" within the city area can exert four functions, which are physical integration, data integration, business integration and inter-working. The "centre" plays the role of "gateway" and actively adapts to "all lines" of information sources at the municipal level, while the township only requires playing the function of use. Through the above paths, the "centre" has realized the integration of municipal, district and township levels and played the functions of business guidance, inspection guidance and supervision guidance so that social problems can be effectively resolved.

3.3 Micro-resolution of Residents' Demands

Social governance is a sophisticated system. The essence of digital government construction is to enhance residents' sense of acquisition and happiness. The "Center" is committed to building a smart city, exploring good paths for "digital governance" to empower transportation, education, medical care, government services, and other fields to improve urban operation efficiency. Through the integration of various platforms for people's livelihood demands, the "centre" has become a "pressure relief valve" for the masses and a "pressure reducer" for the government, which can reduce the "red tape" for residents to seek public services and strengthen the cooperation of social entities.

4. Technical "Negative Energy" - The Governance "Trap" of The Integrated Command Centre in District A of S City

Information technology's "Trans-temporal" nature is of great significance for integrating social resources and bridging the governance gap. At the same time, the "amplification" effect of governance capabilities makes building a digital governance platform a necessary choice for local governments. However, what must be paid attention to is the "obstruction" faced by technology in the process of embedding technology in the existing administrative system. The long-term institutional inertia has increased friction for technology-enabled social governance and promoted the overall efficiency of institutions while providing grassroots support. If the corresponding mechanism and the working environment are not adequately improved and sorted out, the information technology "operating" on the existing administrative track will magnify the shortcomings of the bureaucratic system, thereby bringing about an increase in adverse effects, making the grassroots person feel under the gun.

4.1 Task: "A little Horse Oulls A Cart "

What technology brings is the inflow of unlimited resources, but it lacks the function of integrating resources. The spatial information obtained by perception technology and the social appeal information obtained by the terminal platform needs the corresponding administrative personnel to carry out refined processing. The "humanization" feature of a technology-enabled society can be realized through cooperation between human resources and technology. Under the policy background of "streamlining administration and delegating powers", "streamlining institutional personnel" has become an important measure for local governments in my country to carry out self-revolution within the system. The government leaders of District A of S City stated that under the guidance of this principle, the department had achieved a reduction in staffing. Reasonable simplification exerts a significant influence on avoiding bloated institutions and affecting the governance efficiency.

However, in the current digital practice of local governments in my country, especially when using platforms to manage government through network power, technology is more used as an intermediary to convey a public opinion, and the foothold for processing terminals and a large number of social affairs is still the administrative staff in charge of the business. In the rapid digitization of the "centre", blindly integrating technology platforms is the "exponential" accumulation of personnel, business and burden.

According to the survey statistics, the number of work orders circulating at the terminal is 6,000-6,300 per day. According to the principle of streamlining the grassroots organization in the early stage, the relevant person in charge said that there are currently only ten staff members. Each person

undertakes more than 1,000 work tasks per day on average pieces. The "centre" attempts to simplify localized social life into a series of permutations and combinations that can be calculated. However, the precision it requires "does not match the comprehensiveness, complexity and ambiguity of grassroots governance" and instead causes institutional personnel to bear the burden of an Extremely heavy "business mountain". Therefore, management began to become cumbersome. The effectiveness of management began to decline.

4.2 Process: "Administrative Idle"

While each subject enjoys the "dividend" of technological governance, the complex practical environment also hampers the function of the "centre" in many ways. The resulting out-of-control complaints have become an "obstruction" to its empowerment of social governance. As the "pressure relief valve" for the masses, the "centre" faces not only data management and integration, but also the data identification and application. In addition, the entry of technology into social governance will inevitably lead to confusion about the origin of governance. Platform construction and technology investment should not be ignored, but the improvement of the underlying operating mechanism is more fundamental. Departmental staffs are considering the "economy" of their work rather than the "convenience" of residents' affairs, so the templated response to the status quo has become a meaningful sign of their idling. In most cases, the "Centre" can give timely and complete answers to residents' consultation questions. However, the management of overall affairs needs to gather relevant departments to discuss and obtain a complete solution. Due to the current division between departments, such affairs are easy to fall into the dilemma of online wrangling in the technology platform. Since the substantive solution to the problem cannot be promoted, the process control in the system can only be completed through templated responses, which results in a decrease in residents' sense of efficacy in the network administration platform. In this context, residents post complaints many times because of the unsatisfactory acceptance results. This phenomenon reflects that the government's ability to address residents' demands still deviates from the construction of the concept of "service-oriented government". It also makes the relationship between the government and the society tense in the process of gradually reducing the trust of the residents.

5. How to Resolve The "Technology Negativity"

5.1 Rational Use of "Hard Technology"

The most common way for digital government to benefit citizen is to establish an online platform for political inquiries and realize the synergy of multiple social governance by building channels for residents to participate. However, the access procedure, as a new kind of "red tape", gradually reduces the patience and enthusiasm of society to participate in public governance. All kinds of "verification" and "information input", as well as the slow and unsuccessful use of platforms, hinder the interaction between government and society. Improving residents' happiness and satisfaction, as the fundamental goal of government system reform, has been weakened in the complicated "technical bureaucracy". Therefore, the construction of the digital government must take improving the use of the platform as a critical task. On the one hand, the public sector needs to carry out long-term communication and consultation with technical departments to ensure that the online political platform can truly simplify the procedures. On the other hand, government departments should abandon the "closed" thinking, encourage the expression of public opinion in thought and action, and avoid the phenomenon of "self-examination" of department staff to improve satisfaction, which is the first essence of digital government construction.

The governance element of complicated platform technology lies in "data". The premise of building a digital government in the new era lies in the widespread use of big data and cloud computing. This requires the government to upgrade and innovate the platform and promote the circulation and integration of data resources to deal with non-consulting matters that are difficult to obtain departmental cooperation and negotiation in a short time due to time and space constraints.

First, we should update and develop related technologies for resource integration of data, classify data, and present it in "catalogues" so that information and data aggregation is refined precise and convenient for future extraction and application. The people's livelihood issues presented in the construction of digital government are the front-end sensors of urban social governance. Such information with "targeting" significance is significant to government decision-making. Based on aggregating data, the classification mechanism should be improved, making it an important bargaining chip for linkage and cooperation among various departments and making it possible to solve the existing predicament of the bureaucratic system through data sharing becomes another essence of digital government construction.

Secondly, it is necessary to clarify the data ownership. Based on classification and summary, strengthening the data sensitivity of each department according to the data source and characteristics and establishing a sense of responsibility for data management are both important. The internal flow route of the system can avoid the waste of resources due to the isolation and division of data with multiple governance values. The problem of "data island" can only be eliminated by a smooth sharing mechanism, helping the government to participate in public services and satisfying the society and people's livelihood needs.

Finally, attention should be paid to the interaction between the government and the society. Government departments should actively open a one-stop "window" for data acquisition. By building an open system with standardized standards, data acquisition subjects' rights, responsibilities, and obligations should be clarified, and laws and regulations to reduce the risk of data openness should be improved. Only in this way can we effectively avoid rising governance costs and reduced governance efficiency brought about by the "data chimney", and maximize the realization of the reform goal of "making data run more and the public run less".

5.2 Improve and Update "Soft Technology"

5.2.1 System: improve the top-level design

As one of the "soft technologies" of governance, institutional design regulates the path of digital transformation and clarifies the direction of transformation. It is an autonomous action to lift the "shackles" and add vitality to the construction of a digital government. The value system of "technology plus institution" is an essential prerequisite for the effective interconnection and interaction of multiple subjects.

First, from the perspective of improving the governance system, it is necessary to establish a normalized rather than temporary departmental coordination mechanism, strengthen the interconnection between public departments in an institutionalized way, and effectively promote the institutionalized operation.

The second is to improve the department's efficiency, optimize the reserve of professional talents, and actively introduce professionals as workforce support. It encourages social governance and other related theoretical talents to participate in the platform work and actively seeks technical talents, establishes documents, and updates current affairs hotspots. The Incentive system for learning achieves the accuracy and high quality of residents' appeals.

Third, from the perspective of performance appraisal methods, "a mountain of paperwork and a sea of meetings" and "excessive scarring" are not only essential manifestations of departmental formalism but also typical phenomena of unreasonable and unscientific performance appraisal. The higher-level government should abandon the "quantitative worship" and "index obsession" in the performance appraisal, and proceed from reality, participate in the observation of the work content of the department, rather than blindly transfer the task of performance appraisal to undertaking the construction of a digital government. For technology enterprises, adopt a more practical and scientific assessment method, and at the same time, focus on the establishment of a "fault-tolerant mechanism", rather than just fine-tuning the business processing time to "seconds" for assessment.

5.2.2 Wisdom: Return to The Core of Governance

Digital government construction and efficient social governance requires not only instrumental rationality but also value rationality, not only focusing on the "efficiency" of transaction processing and service provision, but more importantly the "effect" of multiple governance. The "diverse effect" of technology is an important tool for the government to deal with the changing social environment, and it is also an innovative form to alleviate the shortcomings of the bureaucratic system and carry out process re-engineering. However, in the process of applying this tool, it is necessary to combine "validity" and "temperature" to establish a user-oriented rather than department-oriented governance thinking. The premise of the success of digital government is "wisdom philosophy", and under the discourse system of social governance, this kind of philosophy is "serving the people" and improving public satisfaction. The simplification and linear thinking of "technical efficiency theory" in many parts of our country has caused the value of technology to be wrongly amplified, and new bureaucracy has been generated, resulting in the alienation and disposal of the origin of social governance. The most essential reason for the "negative energy" of technology lies in the tendency of "emphasizing technology and neglecting governance".

For the public sector, it is clear that technology is only the lever of social governance, and its role is by no means omnipotent. Only in this way can we better bridge the "chasm" and break through governance bottlenecks. The government should adhere to the "people-centered" governance concept. While paying attention to the empowerment of society by network technology, it should also clarify that the nature of public governance is more social and political, and the will of the people, social values, and civic spirit are inherent. Social ethics should become a multiple measure of the level of social governance, and the combination of online management and visits to the masses is a more effective governance "modernization".

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