

The Design and Application of the Top Business Framework of E-government

Yan Changshun, Shao Yong*

Faculty of Information Technology, Beijing University of Technology, Beijing, China

Email address:

yuewuxing@bjut.edu.cn (Yan Changshun), shaoyong@bjut.edu.cn (Shao Yong)

*Corresponding author

To cite this article:

Yan Changshun, Shao Yong. The Design and Application of the Top Business Framework of E-government. *American Journal of Information Science and Technology*. Vol. 6, No. 3, 2022, pp. 75-80. doi: 10.11648/j.ajist.20220603.15

Received: September 15, 2022; **Accepted:** October 18, 2022; **Published:** October 20, 2022

Abstract: Under the new public management concept, the role of modern government in the whole society is the manager of public affairs and the provider of public services. Therefore, compared with the three levels of the concept, system mechanism and functional structure, methods and means of government management innovation, the content and goal of promoting government management innovation through government informatization are also shown as three levels of interaction. E-government starts from the change of government process, and then gradually changes the administrative organizational structure, decision-making process, regulatory approach, behavior, etc., which fundamentally changes the traditional bureaucratic management model and promotes the in-depth development of interactive public management model. In view of the current situation that the government's ability to perform its functions does not match the objective requirements of sociology, starting with the reorganization of government business, this paper first analyzes the current situation of e-government business, and then designs the highest business framework of e-government, which is composed of six business domains, 22 business lines, and 140 businesses. Finally, the government business framework supports government reform, promotes process optimization. The application aspects of strengthening e-government planning and improving application performance are analyzed in detail. The establishment of this framework can reduce the risk of administrative system reform and promote the government to improve the effectiveness of e-government applications from the perspective of enterprises.

Keywords: E-government, Business Framework, Design and Application

1. Introduction

The application of information technology to promote government management innovation, realize the integration of cross departmental business and services, reengineer administrative business processes, and improve administrative efficiency and government service quality has become the fundamental feature of the integration of information technology application and administrative reform in the Western "New Public Management Movement" [1].

Since the 1990s, almost all western developed countries have put government informatization on the national agenda [2]. The application of information technology can improve the efficiency and effectiveness of administrative management, improve the service of the government to the society, and better establish the image of the government for the people [3].

But more importantly, the application of information technology can be an effective means to promote government reform. In 1993, the National Performance Review (NPR) of the United States first proposed the development goal of building a customer-oriented e-government and government online services. It became the initiator of e-government construction, and soon developed to countries such as the United Kingdom, Austria, Canada, the Netherlands, Finland, as well as international organizations such as the European Union [4]. In view of the heavy financial burden, the low efficiency of the government and the social reality of the public's distrust of the government, the National Performance Appraisal Committee led by Vice President Al Gore of the United States put forward the report of "Transforming the Government by Applying Information Technology" through full discussion of the administrative process and efficiency, administrative measures and the quality of government

services, and clearly proposed to overcome the shortcomings of the United States government in management and service provision with the help of advanced information technology. Reform the government and improve the public's trust in the government; With the help of information technology to realize government informatization, and through the reengineering of government work processes to make government operation more smooth, save the cost of government management, improve government productivity and efficiency, 13 proposals for using network information technology to reform the government have been put forward, which put forward the comprehensive and organic combination of government operation and application of information technology [5]. Therefore, fundamentally speaking, the application goal of information technology should be an important part of the overall government administrative reform goal.

The relationship between the application of information technology and the innovation of government management [6]. As Richard Heeks said, there are two kinds of connections between them. The application of information technology supports the reform of the government's public sector; The reform of the government's public sector can affect the role of information technology [7]. Information technology has enhanced the impetus for government management innovation, and system innovation has created the necessary environment for technology to play its role effectively [8].

The process of applying information technology to promote the innovation of government management contains the essence of the transformation from the existing government form and bureaucratic structure formed in the industrial era to the networked government organization structure and operation mode constructed by modern science and technology such as information technology and adapting to the Internet as the main feature [9].

It is precisely because of the support of information technology and network technology that the following trends have emerged in contemporary government innovation [10]. 1) Integrated pattern. The integration pattern refers to that in the information age, government departments and other public departments strengthen coordination and cooperation in terms of the division of authority, working mechanism, information communication and resource sharing, and at the same time, they act together with clear responsibilities to achieve a seamless and coordinated government management and public service system [11]. The pattern of integration has developed in two directions, one is the cooperation between government departments, the integration of government department members and organizational goals, and the other is the cooperation between government departments and social organizations, and the public in public affairs management. 2) Decentralized and flat organizations, that is, from the traditional hierarchical structure to networking and flat development, adopt the methods of decentralization, reduction of levels, authorization and decentralization of decision-making power to accelerate information communication and strengthen organizational collaboration

[12]; 3) "One stop" service. Government agencies provide centralized, convenient and high-quality services for enterprises, social organizations and citizens by integrating businesses previously scattered in various functional departments, and realize remote and cross departmental service application and business handling from the same network entrance, greatly improving the efficiency of government departments and public service level [13].

In the practice of e-government, it has gradually broken the previous thinking mode and practice mode of separating technology application and government management innovation, and emphasizing the integration of information technology application and government management innovation [14]. It realizes government management innovation through the application of information technology, realizes "one-stop" interaction and service oriented to society, and "integrated" business integration oriented to government functions across departments "Process oriented" collaborative office work within the administrative system, "unified platform" information exchange and resource sharing for business applications, and "sustainable development" administrative management system and operating mechanism for digital management [15].

At present, the functions of government to fulfill the objective can not match social requirements. Our first priority is to conduct a reasonable institutional mechanisms reform, and establish a more efficient e-government by integrating information technology. This article is in accordance with the requirements of combination of e-government and administrative reform, combines with the actual governance, puts forward a top business framework for e-government in theory, and gives suggestions for government administrative reform and e-government development.

2. The Design of E-government Top Business Framework

2.1. The Overview of E-government Top Business

Government business is in accordance with relevant national laws and work rules, decomposes department or levels of government functions, forms tasks or issues that have clear results, relative stable process and clear terms of reference. From different levels, the thesis defines government business into business domain, business lines and core business.

Based on the correlation range of government operations and functions, the business domain classifies government business into government business domain. According to the characteristics of the government, government business can be divided into six business domain: public services, social management, urban management, science and technology, culture, economic development and government resource management.

According to the government business area, long-term development goals and tasks, Line of business is the main line to sort out the relevant functional departments, after that,

associates portfolio, and forms "conductive to the services and management goals, to strengthening cross-sectoral business collaboration, to integration and sharing of information resource." "The core business is the business lines that assumes core functions of government departments, such as administrative licensing matters, administrative law enforcement, supervision and management and other key operational matters.

2.2. The Top Business Framework of E-government

The Top government Business Framework of E-government shows in Figure 1.

The six business domain theory of government consists of the following 22 business lines and 140 business constitutes:

- (1) Labor employment business line includes nine core businesses.: employment guidance; entrepreneurial training; employment of graduates; employment of disabilities; unemployment registration; transfer of rural labor; vocational skills; labor market regulation, labor security supervision.
- (2) Social Security business line includes eight core businesses: the towns Medicare; rural cooperative medical care; basic pension; subsistence allowances, social assistance; the special care; welfare, charities.
- (3) Development of the education business line includes four core businesses: basic education; vocational education; higher education; distance education.
- (4) Housing support business line includes three core businesses: low-rent housing guarantee; affordable housing management; real estate market regulations.
- (5) Health care business line includes eight core businesses: disease prevention; immunization management; public health control; health care services; community health; maternal and child health; family planning; elderly medical services.
- (6) Environmental Protection business line includes four core businesses: environmental monitoring, forecasting; pollution prevention and control; ecological construction management; energy saving.
- (7) Transportation business line includes three core businesses: public transportation; traffic traveling services; transportation Management.
- (8) Culture business line includes nine core businesses: management of cultural and recreational facilities; cultural relic's management; park management; radio and television press and publication; tourism; Internet culture construction and management; sports facilities; national fitness.
- (9) Community and social services lines of business includes ten core businesses: community management; community public services; rental management; household population management; floating population management; social organizations registration services; petition services; non-emergency assistance services; administrative mediation and judicial mediation.
- (10) "Rural" service business line includes seven core businesses: rural development; agricultural science and technology; forest management; public services in rural areas; agricultural market; prevention and control of plant and animal disease; township enterprises.
- (11) City operation and management business line includes seven core businesses: underground pipe network management; municipal facilities management; urban energy regulation; water resources management; urban protection projects; public crisis management; disaster management.
- (12) Ethnic, religious and overseas business line includes three core businesses: the ethnic affairs; religious affairs; overseas affairs.
- (13) Public Safety business line includes eight core businesses: production safety; food and drug safety; quality supervision; information security; social order; crime prevention; rehabilitation of offenders; community correction.
- (14) Law enforcement and supervision business line includes five core businesses: urban management enforcement; culture comprehensive law enforcement; traffic enforcement; administrative supervision; administrative reconsideration,.
- (15) Urban planning and construction management business line includes six core businesses: urban and rural planning management; road network construction; urban and rural public facilities; river administration; rural and urban greening construction; the city's comprehensive service system.
- (16) Country resource management business line includes four core businesses: management of country resource; land market management; geological environmental management; mineral resources management.
- (17) Public finance business line includes six core businesses: tax administration; non-tax revenue management; budget management; treasury management; government procurement; government assets management.
- (18) Business services and management lines of business: business registration and business services; market and trade services; investment promotion services; industrial promotion services; business inspection; financial regulation; advertising supervision; Enterprise Credit Management 8 core business.
- (19) Technology services business line includes six core businesses: science and technology development; technology and innovation; SME services; intellectual property rights; scientific and technological exchanges; science activities.
- (20) Economic operation monitoring business line includes five core businesses: economic operation monitoring; price guidance; investment guidance; government investment projects; market access.
- (21) The Government Information Management business line includes five core businesses: policies and regulations; statistics; information management; file management; open government information.

(22) Comprehensive services business line includes five core businesses: supervision; performance

management; personnel management; logistics management; financial management.

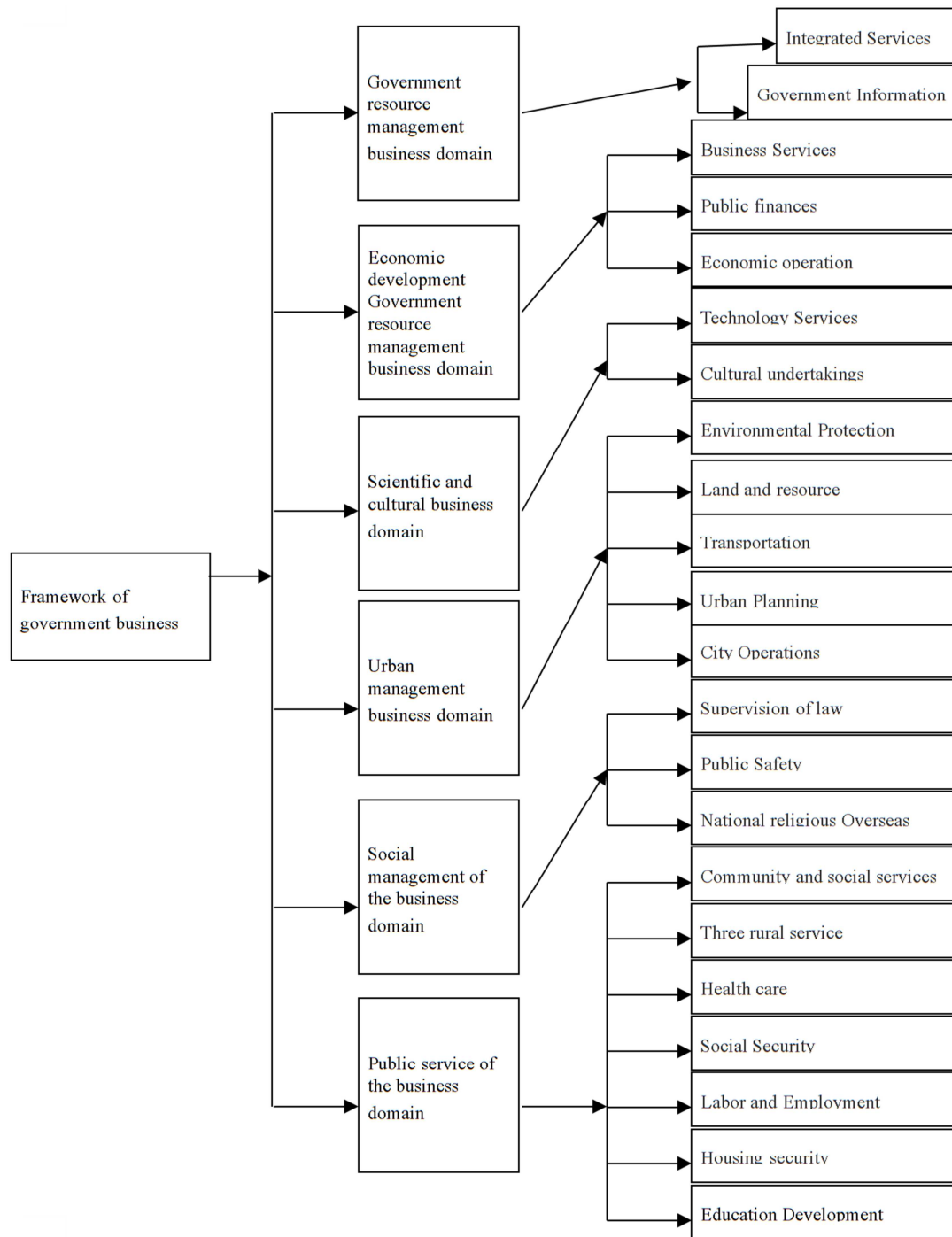


Figure 1. The Top Business Framework of E-government.

3. The Application of the Top Business Framework

Operational framework of the government has broad application prospects. In supporting government reform, promoting process optimization, strengthening e-government planning and improving application performance.

3.1. Supporting Government Reform

According to the above top business framework, the government can further improve the existing services, simplify the service process, reduce filling out the forms, depress the threshold of access to the services.

Based on models, it can be repositioned government agency business areas: after positioning government agencies, and

according to the data of government business areas model, it can be specified the government business areas. So that you can determine this government agency's business areas and the jurisdiction of business scope. You can take advantage of positioning of the government agency business, analyze the rationality of the government agency operational responsibilities settings. For example, China's government promoting separation of supervision, management and service, you can analyze it by using the positioning data of the gradual acquisition of the government agency business areas. Secondly, the positioning data of the government agency business, can help citizens and enterprises to query the government agency in charge of related business. By the number of institutions, it can be determined the collaborative business institutions, and simplified government departments work.

Process of establishing a government organization model: for a specific business unit, first you should check whether there is already an existing government organization model? If the part of the organizational model has not been added, then to locate institutional position, and determine its administrative divisions and administrative level. After that, you can locate its business areas, and determine the function scope. Finally, based on governmental organizations describing template, you can add it into the government organization model.

Establishment of information sharing index: establishing relevant thesauri based on the model of administrative divisions, administrative level model, government business scope model and agencies model. Using automatic indexing technology to identify system characteristics, regional characteristics, administrative level, operating characteristics of e-government, and then it can be inquired and gathered according to administrative level, the government business scope, and government organizations. Finally, realize network of information sharing.

In order to analyze government business top concept classification, we also need to improve the classification of the subordinate business. This can increase or modify the specific administrative divisions, administrative level, institutional classification, business areas classification, when we use this model. Therefore, we can say that the application framework is not necessarily life-long, but has a flexible mechanism, it can update and publishes the contents of the application framework, by the reform of government institutions.

3.2. Improvement of E-government Performance

Based on established business models, we adopt analytical methods for the production of knowledge, combine with UML class diagrams, establish graphical PRM top model. When we use it, we need to digitalize graphical PRM, name the various business operations request business collaboration, perform appraisal analysis and find successful energy-saving and links, so that it can be repeated, sharing, and become the standard. To the Invalid working, we can conform the location and processes by their names, and ultimately reject them.

Each According to the figures of the PRM, government

departments select their business operations, then, we can determine their responsibility of government services and management, establish business collaboration departments and operational assessment requirements by the previous step and the next describe. The e-government system must be in accordance with the PRM, describe the system corresponding operation of government business type and business operational procedures, so as to achieve the collaborative work between the e-government system and the automatic transfer of the business workflow. The application framework of the PRM model is also a gradually increasing and refining process. First determining the top operational taxonomic, then, with the commencement of the application framework, gradually adding new content and updating the model data according to the version number.

3.3. The Application Framework Provides Back Support for the Portal

Government portal is different from other government sites, because it is the comprehensive searching of i government web sites, corporate websites, educational websites and all other websites. Therefore, the design and hardware server requirement is much bigger difficult than the contents of a single site search. The portal provides the component word search and classification search, do advanced searching according to the administrative region, the township level, government agencies, business areas, business operations and work processes. The search engine should be able to traverse within their government websites, corporate websites, and school websites, achieve automatic indexing of all government documents, government management and service sites under the services jurisdiction. When user inquiries and requests the portal, the back portal completes to search numbers of government websites and government business operations. Therefore, it requests strict accordance with the standards of the party and government applications framework.

4. Conclusion

The framework of the e-government business is mainly used in the following areas: support the top design of the government agencies functions, reduce the risk of the administrative system. Promote to change from self-service to serving the public, improve government services and management level. To be the guidance of the municipal bureau and county government, carry out operations combing, process optimization and application integration. Guide and develop the government general business component, regulate the operation of government business; to radically improve the security of e-government applications from the business point of view; guide system upgrade, focus on core business processes, purchase in large-scale, and reduce the development costs of e-government system. In the future, sub businesses can be expanded and designed on the basis of the top-level framework to meet more specific business requirements.

Acknowledgements

The paper would like to thank the support of the project "Research on New Generation Information Detection and Testing Technology and Methods" (40025001201838), as well as the authors of the references and relevant researchers, whose research has given me important reference and help, which has provided a good reference for the completion of my paper.

References

- [1] Chen Yumei. The role and implementation strategy of e-government in the construction of service-oriented government [J]. Undertaking&Investment, 2022, 33 (1): 208-210.
- [2] Chen Chaodong. Research on the elements, essence and characteristics of e-government service [J]. Public Administration & Law, 2022 (4): 25-34.
- [3] Zhang Juzheng, Wang Fengke, Zhang Sijie. The Enlightenment of American E-government Development to China [J]. Journal of Henan University of science & Technology (Social Science), 2021, 39 (6): 41-46.
- [4] Ren Dongxue. Research on the optimization path of beijing e-government [J]. China Broadband, 2021 (2): 96.
- [5] Zhao Jindong. Analysis of the development status of e-government platform [J]. Science and Technology & Innovation, 2020 (22): 101-102.
- [6] Lu Xujie. Talking about e-government to promote the construction of service-oriented government [J]. Chinese and Foreign Entrepreneurs, 2020 (3): 252.
- [7] Li Ji. Prospects for the development trend of e-government during the "Fourteenth Five Year Plan" period [J]. Administration Reform, 2020 (11): 4-9.
- [8] Gao Jie. Research on government management mode under e-government environment [J]. Shanghai Business, 2021 (5): 84-85.
- [9] Li Bin. Research on the construction of agricultural e-government platform [J]. Agricultural Science & Technology and Equipment, 2021 (4): 70-71, 74.
- [10] Yan Li. Research on e-government from the perspective of service-oriented government institutions [J]. China CIO News, 2021 (10): 111-113.
- [11] Geng Jixiang, Liu Zhenjing, Wang Ruiqi. Research on e-government and business process reengineering [J]. Fujianzhiliangguanli, 2020 (17): 249.
- [12] Jin Zechen. Research on the Security Situation and Work of E-government [J]. Network Security Technology & Application, 2020 (2): 96-97.
- [13] Zhu Ruixun. Challenges and Countermeasures of Government Digital Transformation and E-government Deepening Development [J]. Administration Reform, 2022 (2): 61-68.
- [14] Li Weicheng. Research on the development of e-government based on knowledge management [J]. Management & Technology of SME, 2022 (5): 19-21.
- [15] Cui Wei, Kang Licheng, Sun Jiaqing, et al. Optimization of e-government process in maritime e-government system [J]. Shipping Management, 2022, 44 (4): 8-11, 16.