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Exploration on the Problems and Countermeasures in the Construction of Yiyang Smart City

Zuocai Dai[1,*], Shuguang Deng[1], Tongguang Yang[1], Huan Lei[2], Sha Zhou[2], Jun Liu[1], Bin Gong[1], Zhiliang Huang[1], Hangyang Li[1], Xia He[1], Lihong Zou[1], Yanpeng Wang[1]

[1]College of Mechanical and Electrical Engineering, Hunan City University, Yiyang, China
[2] Hunan City University, Yiyang, China
daizuocai@163.com
**Corresponding author*

Abstract: *Based on the research status of smart city construction in china and abroad, in-depth research and analysis, induction and summary of the overall status and development trend of smart city construction in Yiyang City, objectively evaluate the practical effects of implemented policy tools, analyze the challenges that Yiyang faces in the construction of a smart city, explore new strategies to match Yiyang's smart city construction, which puts forward constructive countermeasures for the challenges faced by the Yiyang Municipal Government in supporting the construction of smart cities.*

Keywords: *Smart City; Yiyang City; Cloud Computing Platform; Public Service Strategy*

1. Introduction

From the perspective of global development, the in-depth integration of the global Internet, Internet of Things, big data, cloud computing and the real economy, and the ever-changing degree of informatization of infrastructure have made all countries in the world pay more and more attention to the sharing of information resources and the construction of smart cities[1-3]. How to use urban smart construction to better serve regional political, economic, cultural, social and ecological development has gradually become a hot issue of political and academic attention. Based on this, in 1992, Singapore implemented the "Smart Island Plan". In 2009, Japan implemented the "I-Japan2015 Strategy". In 2010, the European Union implemented the "Europe 2020 Strategy". In 2011, South Korea implemented the "Smart Seoul2015". These plans are all based on informatization construction, driven by information and communication, and aimed at intelligent and globalized construction, to build a digital smart city with intelligent growth, sustainable growth and inclusive growth, in order to realize administrative services such as administrative consultation and business processing using mobile carriers such as smart phones. With the introduction of the concept of smart city on a global scale, cities in developed European and American countries such as the United States, Sweden, Germany, and France have successively carried out investment and construction of smart cities [4-7]. The construction of smart cities has also entered a golden stage, making positive contributions to the development of cities.

From a national perspective, the 19th National Congress of the Communist Party of China put forward development goals such as building a scientific and technological power, a network power, a digital China, and a smart society, as well as strategic deployments to promote the deep integration of the Internet, big data, artificial intelligence and the real economy. In August 2014, eight ministries and commissions jointly issued the "Guiding Opinions on Promoting the Healthy Development of Smart Cities". It established the basic principles of smart city construction, emphasizing that the construction and development of smart cities should be people-oriented, and actively play the important role of the market. The Central City Work Conference was held in December 2015, the National 13th Five-Year Plan Outline was passed in March 2016, and the National Informatization Development Strategy Outline was jointly issued by the Central Office and the State Office in July 2016. They all list the construction of smart cities as the focus of China's future development. Transform the way cities develop by building smart cities. On April 19, 2016, when talking about building a smart city, General Secretary Xi clearly pointed out that it is necessary to actively develop and improve e-government, build an integrated online platform, and promote the hierarchical and classified construction and development of smart cities[8-12]. At present, strong support has been given to the construction and

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development of smart cities from the central to the local level. A lot of practices have also been carried out in the construction and development of smart cities across the country, providing new means for improving the level of government and urban governance.

At the local level, a large number of policies and regulations have been issued across the country to regulate the construction of local smart cities. Nanjing was the first to put forward the concept of smart city construction. Subsequently, cities such as Wuhan, Shenzhen, Beijing, Hangzhou and Xi'an have carried out smart city pilot construction cities [13]. The construction of smart cities in China is blooming everywhere, and the development trend is rapid. At the same time, with the positive development of the Internet, under the new situation, the construction of smart cities has become an important model for the transformation and upgrading of many cities, and has received the attention of governments at all levels. Although the construction of smart cities has been generally developed and promoted, as a new model of urban construction and development, there is no fully mature construction experience for reference, and its development is deeply affected by the development of Internet technology. At present, the construction and operation of smart cities are still in their infancy, and it is still necessary to think about the policy strategies, integrity and systematicness of smart city construction.

According to the characteristics and regional characteristics of different cities, the details and challenges faced by smart city construction are not the same. For Hunan Province, the integration process of "Changzhou-Zhuzhou-Xiangtan" has accelerated, and "Yiyang City" is in a special position adjacent to it. It is necessary to seize the development opportunity of "smart city" and use information technology to effectively integrate various information systems and platforms of the city, realize the collaborative linkage and seamless connection between urban information and citizens, and meet and respond to various urban information needs most efficiently. Build a safe, efficient, green and convenient urban form, and build a smart city to build a large ecosystem. This has far-reaching practical significance for Yiyang to become a benchmark in the construction of smart cities.

Since 2012, Yiyang City has divided the 7-year planning and construction period into two phases, the short-term "digital Yiyang" and the long-term "smart Yiyang", based on the ten principles of resource integration and overall planning during the construction of smart Yiyang. It has been nearly seven years since the implementation of Yiyang's smart city construction plan, during which more than ten smart city projects such as "smart real estate", "smart agriculture", "smart transportation" and "smart medical care" have been established. At the same time, Yiyang City has established a cloud computing platform and has a data sharing system that has begun to take shape. In the fight against the novel coronavirus epidemic in early 2020, Yiyang City took the initiative. Through the data collected by smart transportation, real-time control of vehicle information entering and exiting Yiyang City. While accurately querying the entry and exit information of the suspected infected person, determine the action route of the suspected infected person, and disinfect the place where the suspected infected person goes. In addition, people who have been in contact with suspected infected persons will be quarantined and observed. After enabling the mobile remote consultation room, experts, doctors and patients can "talk over the air", which allows both parties to conduct consultations more safely, analyze medical records, discuss conditions, and provide timely treatment, which shows the convenience brought by urban intelligence to the people[14-16].

However, there are still many challenges in the overall planning and construction of Yiyang's smart city: The top-level design still needs to be strengthened. The intensification of information infrastructure is insufficient, and the infrastructure of big data transmission network is not perfect. Lack of characteristic elements of regional smart city construction. Resources have not been effectively integrated, and there is a phenomenon of duplication of construction. The phenomenon of information silos still exists. The public experience satisfaction is low, and the awareness of intelligence is weak. Construction is less sustainable. If the strategies to deal with many challenges can be effectively integrated, it will have important practical significance for the construction of Yiyang's smart city, and even the sustainable development of industrial upgrading, social economy and government services.

2. Basic Ideas for the Exploration of Yiyang Smart City Construction

The construction of a smart city needs to be completed through the cooperation of the government, society and enterprises. Among the three, the government is undoubtedly dominant. At a macro level, the government needs to formulate laws and regulations to regulate, support, and guide enterprises and social norms to participate in smart city construction in an orderly manner. In practice, it is necessary to

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cooperate with enterprises and society, and divide labor and cooperate. Only by properly exerting the government's ability and role in building smart cities can we better control the speed and quality of construction, coordinate the interests of the government, society, and enterprises, and achieve common development.

Following the instructions of Yiyang Municipal Party Committee Secretary Qu Hai, the city will actively seize the major opportunities brought by the establishment of a "new development pattern with domestic circulation as the main body and domestic and international dual circulations promoting each other" across the country. Vigorously implement the strategy of innovation-led, open-to-rise development, unswervingly deepen strategic cooperation with Huawei and its technology ecosystem partners, and give full play to its comparative advantages. Do a good job of building, supplementing, extending, and strengthening the chain, and accelerate the development of digital economic clusters. Give full play to the location advantage, adhere to the strategy of connecting east to east, and integrate into Changsha in an all-round way. Adhere to the goal of "good governance, benefit the people, and develop business", and introduce the latest technologies from high-tech companies such as Huawei. Accelerate the construction of "Yiyang Smart Brain" and improve public services such as transportation, education, medical care, urban management, and ecological and environmental protection. Continue to build a new smart city benchmark, and accelerate the high-level and high-quality development of Yiyang's urban intelligence.

Based on the above research and analysis, the basic idea of this research topic is as follows: The construction of smart city is rich in content and large in investment, and is closely related to all aspects of urban development. It is a long-term and global system engineering. Yiyang area should be based on the principles of "scientific planning, advanced technology, first-in-class, integrated and shared, people-oriented, reliable and safe". Strengthen top-level design, accelerate the application of high-tech, encourage smart project pilots, strengthen information resource sharing and the construction of big data transmission network infrastructure. Continuous efforts will be made to improve services that benefit and facilitate the people, build a long-term mechanism, and strengthen risk prevention, so as to accelerate the construction of smart cities in Yiyang. The basic route framework of the research is shown in Figure 1.

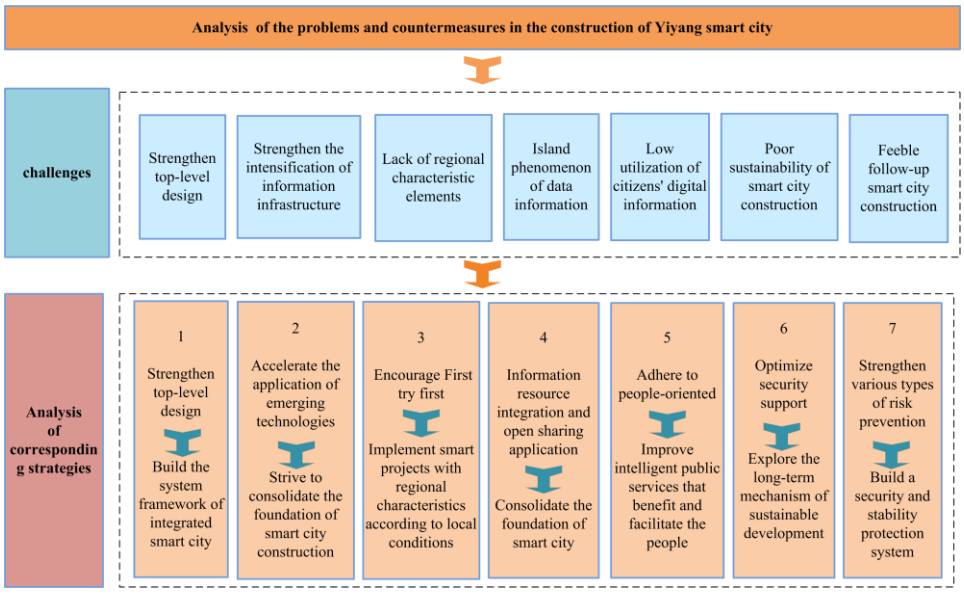

Figure 1: Basic route framework for research on smart city construction in Yiyang

3. Research on the Basic Strategy of Yiyang Smart City Construction

(1) Strengthen the top-level design and build a “two-adjustment and three-structure” integrated smart city system framework. As shown in Figure 2, data collection and data transmission are realized through the city perception system, and data is aggregated. Then, through the intelligent system of Smart Yiyang, the integrated analysis of data is realized, and the upper-level smart application systems are supported to form the smart city brain of Smart Yiyang. Promote the agile response and steady development of Yiyang's new smart city.

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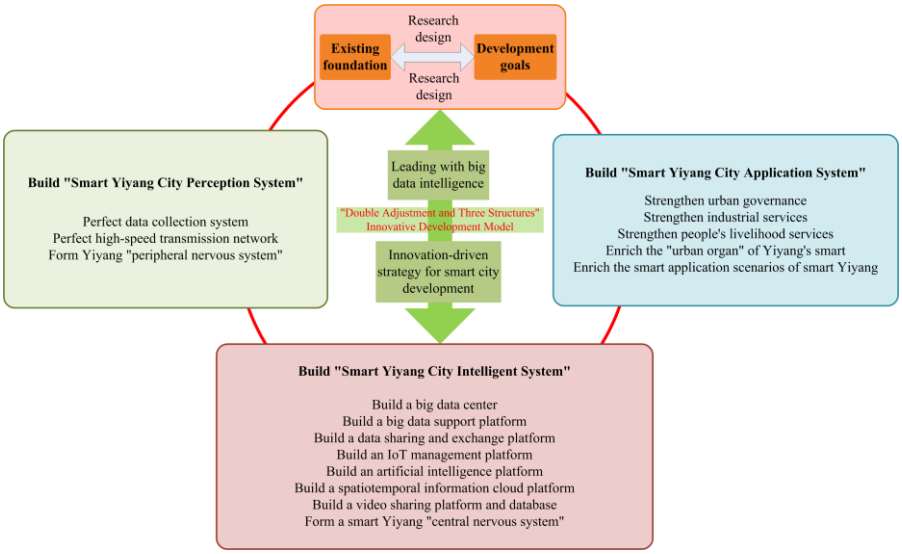

Figure 2: Strengthen the top-level design strategy of Yiyang's smart city

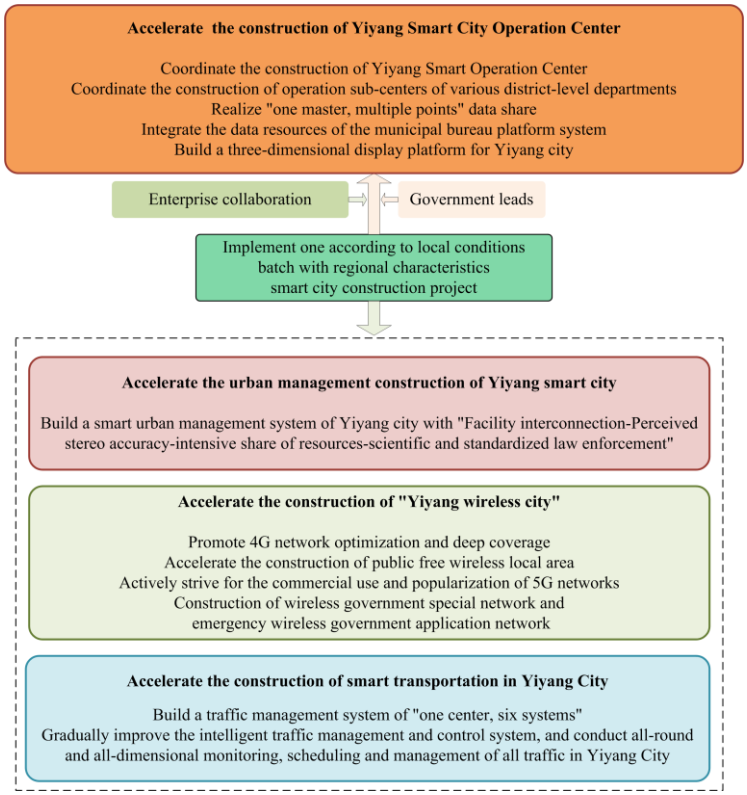

Figure 3: Accelerate the application strategy of emerging technologies in Yiyang City

(2) Accelerate the application of emerging technologies and consolidate the foundation of smart city construction. As shown in Figure 3, the construction of smart cities is inseparable from the innovation and promotion of emerging technologies. Yiyang area needs to accelerate the construction of new smart city and shouled accelerate the application of emerging technologies. Through the construction and application of new technologies, new networks and new platforms, we will consolidate the foundation of smart cities and improve the level of urban intelligence and intelligence.

(3) Encourage pilot projects to be carried out first, and implement a number of smart projects with regional characteristics according to local conditions. As shown in Figure 4, to accelerate the construction of a smart city in Yiyang, it is necessary to build a high-rise building and do a good job in the overall planning, and also need to combine the economic reality of Yiyang urban area. Adhere to the priority of the foundation, led by demonstration, and focus on the areas that are urgently needed by the people at present. Highlight pertinence, effectiveness, and operability, and solidly implement a

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batch of key smart projects with public, basic, innovative demonstration, and business synergy, such as smart Yiyang operation center, smart city management, wireless city, and smart transportation. In this way, the use and promotion of the basic platform will be promoted, and the benign interaction between the basic platform and the application will be realized, so as to play a leading role in the demonstration.

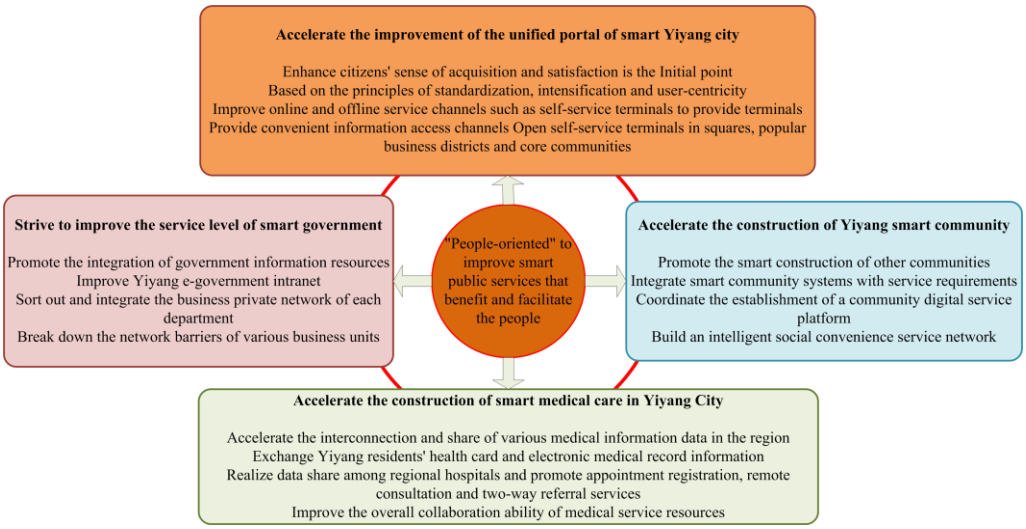

Figure 4: Accelerate the implementation of smart engineering strategies that adapt to local conditions and regional characteristics

(4) The integration of information resources, open and shared applications, and the foundation of building a smart city. As shown in Figure 5. It is necessary to adhere to overall planning and coordination, resource sharing, and continuously strengthen the open and overall management of various resource sharing in Yiyang City to effectively break down information islands. Promote the integration, opening, sharing and application of structured and unstructured data resources in the region in a safe and orderly manner.

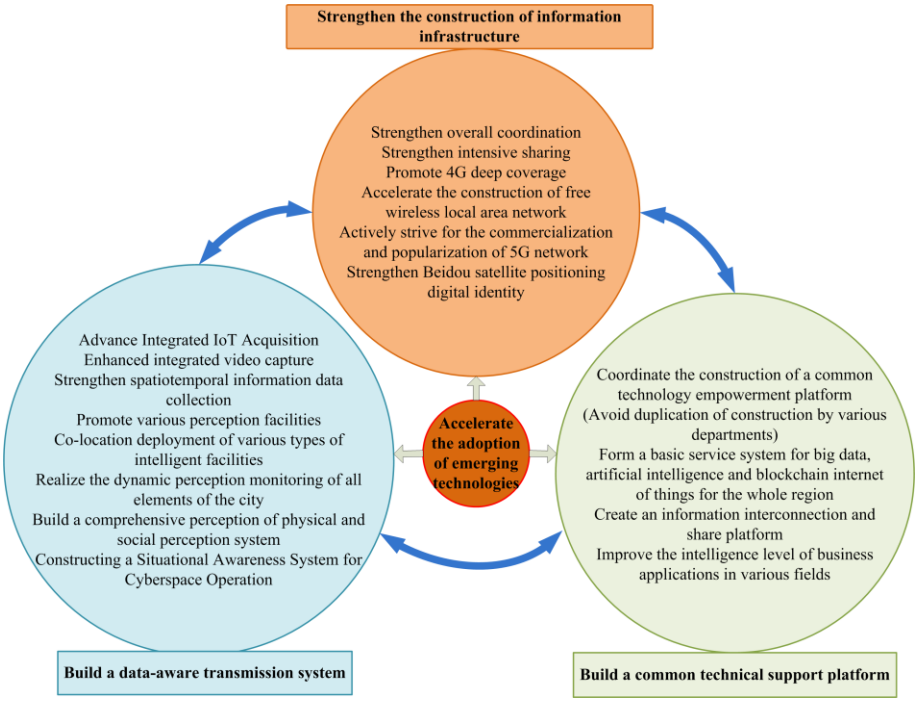

Figure 5: Strengthen the integration, opening and sharing application strategy of various information resources in Yiyang City

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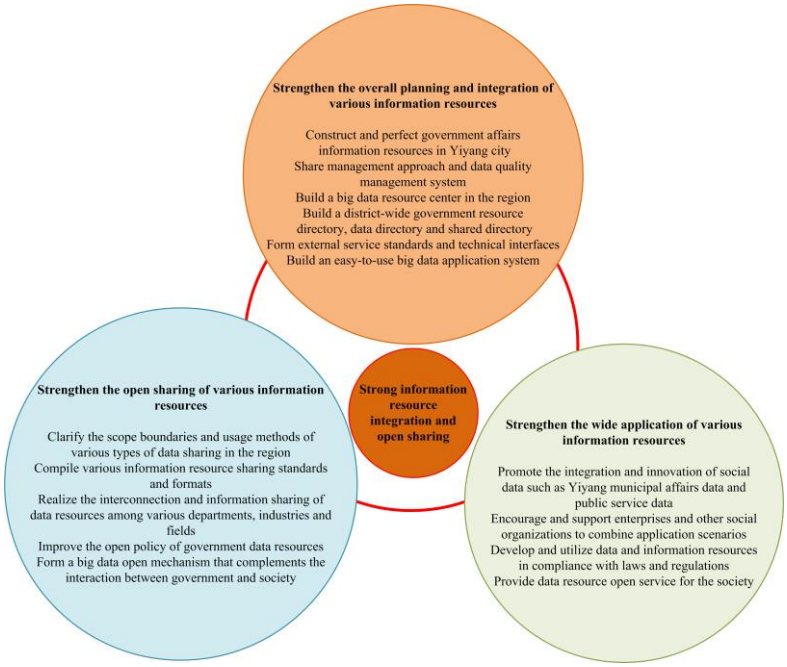

Figure 6: Improve Yiyang City's Smart Public Service Strategy for Benefiting and Convenience

(5) Adhere to people-oriented, and improve smart public services that benefit and facilitate the people. As shown in Figure 6, the starting point and goal is to promote the general improvement of people's living standards and quality, and give full play to the important role of data resources in service innovation and governance model innovation. Integrate government public service resources, strengthen the coverage of public services in rural areas, promote the equalization of public services, and provide diversified, high-quality, and inclusive livelihood services, so that people can truly experience the convenience and benefits of smart city construction.

(6) Optimize security support and explore long-term mechanisms for sustainable development. As shown in Figure 7, building a smart city is a long-term systematic project. The smart city construction of Yiyang City needs to build a perfect guaranteed mechanism. By improving the guaranteed support in management, operation, talents, etc., we will ensure the sustainable development of intelligent construction.

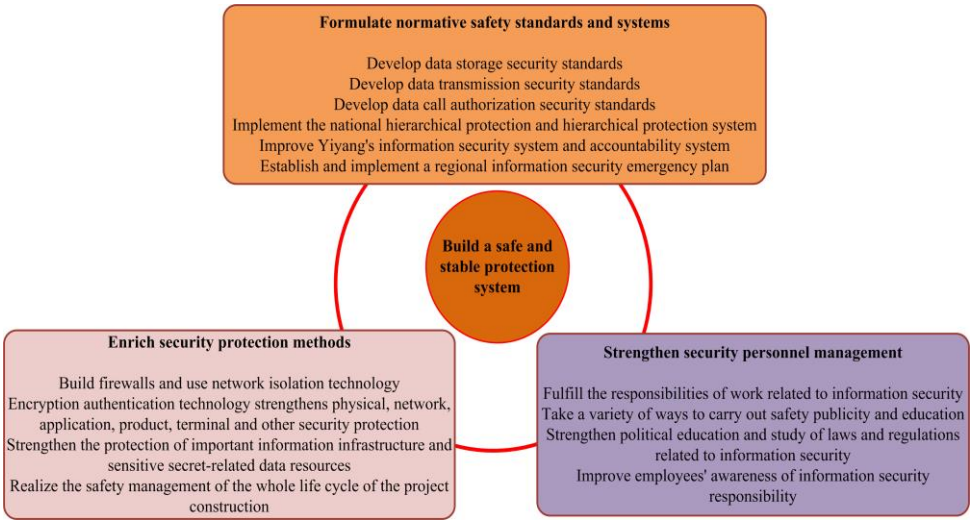

Figure 7: Exploring the long-term mechanism strategy for sustainable development of smart city construction in Yiyang City

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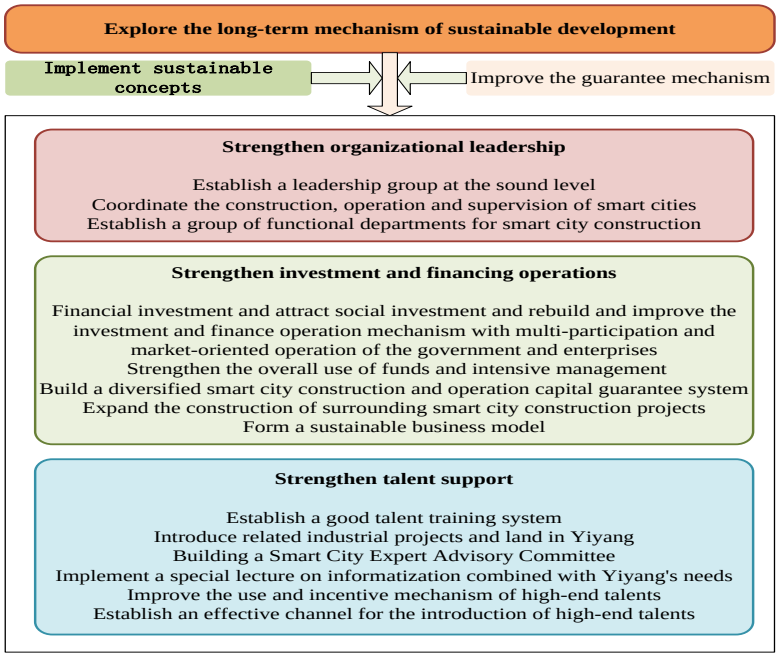

Figure 8: Strategy for constructing a protection system for Yiyang's information security and stability

(7) Strengthen the prevention of various risks and build a safe and stable protection system. As shown in Figure 8, in the process of promoting Yiyang's smart city, there will inevitably be a large amount of data and information centralized storage and processing. On the one hand, it brings efficiency, convenience, convenience and benefit to the people. But on the other hand, the accumulation of a large amount of important data involving confidential security, economic indicators and social and public interests has hidden huge risks. Once they are attacked by a network, data leakage and data loss will result in unimaginable consequences. Therefore, in the construction of smart cities, it is necessary to strengthen the prevention of various risks and strive to build a safe and stable protection system.

4. Conclusion

(1) Yiyang City's smart city construction has formed a data sharing system that has begun to take shape: Under the leadership of the Yiyang Municipal Party Committee and various departments of the municipal government, Yiyang City has been building a smart city for nearly 7 years. It has successively built basic information systems such as Smart Brain + Government Services, Digital Yiyang, Xueliang Project, Smart Education, Smart Water Affairs, Smart Transportation, Internet Supervision, Smart Yiyang APP, Enterprise Integration Service Platform, Smart City Management, and Integrated Command Platform. This information system has made positive contributions to promoting the industrial transformation and upgrading of Yiyang City and improving the city's service functions. At the same time, in the face of the "new development pattern of mutual promotion of domestic and international dual circulation", the city's smart city construction and development at a deeper level also ushered in unprecedented opportunities and challenges. It is urgent for the government to introduce smart city construction policies in terms of finance, industry, data platform, talents, etc. to promote and guide its development at a deep level.

(2) Yiyang's smart city construction still faces many challenges: There are many challenges in the construction of smart city in Yiyang City, such as "insufficient intensification of information infrastructure, the phenomenon of information islands still exists, low public experience satisfaction, and poor construction sustainability". Therefore, from the aspects of regional development, information sharing, public participation, investment and financing system, etc., the reasons for the above challenges and coping strategies need to be further studied and sorted out.

(3) Yiyang's smart city construction will help promote industrial development and the transformation and upgrading of government services. In view of how to accelerate the response to the challenges faced by Yiyang's smart city construction under the new situation, this research will start from "Strengthening the top-level design of smart city construction and building an integrated smart

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city system framework, accelerating the application of emerging technologies, consolidating the foundation of smart city construction, encouraging trial and implementation, implementing smart city construction projects according to local conditions, breaking down information barriers, strengthening the integration and open sharing of various information resources, adhering to people-oriented, improving the smart public services that benefit the people and the people, optimizing guarantee support, explore the long-term mechanism of sustainable development, and strengthening various risk prevention, building a safe and stable data and information protection system, etc.", these major aspects, and putting forward suggestions to accelerate the construction of smart city in Yiyang City. These measures will help to give full play to the role of Yiyang's smart city construction in promoting local industrial development and government services, thereby promoting the transformation and upgrading of local industries and services.

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