

스마트도시서비스의 지속가능한 관리·운영을 위한 비즈니스모델 연구

Business Model for Sustainable Smart City Service

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SUMMARY

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Urbanization is under way rapidly worldwide, and more people are expected to live in cities in the future. Along with urbanization, various urban problems are occurring such as traffic congestion, increase in crime, and environmental pollution, and people have begun to pursue a more convenient way of living by resolving the issues that cause inconveniences in their lives. Cities are transforming into sustainable “smart cities” where new urban services are provided by applying advanced technologies.

Unlike existing urban planning, smart cities have a vision of improving the quality of life by providing services using smart technologies. Accordingly, smart city projects can be conducted successfully by establishing and operating quality smart city services in smart cities. In Korea, public smart city services are mainstream, as they are mostly established through public projects. As a result, it is difficult to generate a profit, making it hard to secure expenses for operation and maintenance. In this case, the services cannot be provided in a sustainable way.

This study aims to conduct an analysis of the business model for major domestic smart city planning services and check the state of smart city services in Korea. The analysis of

the business model for smart city services is conducted to identify the characteristics of smart city services in Korea and find the institutional means and methods to ensure that smart city services can have a stable operation structure from the planning stage. First, literature studies are conducted to look at the trend of domestic and overseas smart city services. This study also examines domestic laws and institutions related to smart city services.

Next, the business model for major smart city projects conducted recently in Korea is analyzed to identify the operation status of Korea's smart city services, and interviews with the stakeholders are conducted. Finally, the implications of the state of smart city services are identified and ways to provide strategic and institutional support are proposed for a sustainable management and operation of those services.

Korea supports smart city projects proactively with its "Smart Implementation Strategies" and "The Third Master Plan for Smart Cities," and 76 local governments across the country are implementing smart city projects. The major projects include the "National Pilot Smart City Project" and the "Smart Challenge Project." In this study, smart city services refer to smart services provided with the involvement of the public sector. Recently, significant efforts have been made to boost the participation of private companies in the establishment and provision of smart city services by promoting the establishment of the SPC for a national pilot city and adopting a regulatory sandbox system for smart city. In other countries, private-public partnership, where the expertise and resources of the private sector are used for public services, is grabbing the attention as an effective financing model.

A business model analysis is conducted to identify the state of planning and operation of smart city services. The business model canvas explains the business model that generates profit by creating and providing value. The business model canvas has the advantage of being able to show the process of creating and delivering value at a glance and is used widely for practical work. This is composed of nine blocks: key partners, key activities, key resources, value proposition, customer relationships, channels, customer segments, cost structure, and revenue streams. The government or non-profit organizations may look at the business model by adding the blocks of social and environmental cost and social and environmental benefit.

The business model canvas was analyzed for the services that are planned or being

provided in the national pilot cities (Busan, Sejong) and cities subject to the Smart City Challenge Main Project (Daejeon, Bucheon, Incheon). In addition, interviews were conducted with stakeholders from companies, the public sector, and academia to identify the difficulties in the planning and operation stage that are not shown in the plan.

The implications of the smart city services in Korea are as follows: First, smart city services, which are currently under way, cannot be implemented only with the budget of local government from the perspective of profitability. The service is operable under the premise of the central government's support such as public projects. Second, for public smart city services, it is not appropriate to focus on the profitability of the project itself given the public nature of the services. Third, it is necessary to secure the expertise and continuity of the people in charge of the smart city at each local government in order to fulfill the role of the public sector as a key participant. Finally, the central government needs to provide clear standards and guidelines for management and operation to make sure that smart city services are provided stably by running an organization that can solve issues related to regulation, laws, and institutions that could hamper the operation of the smart city service by the local governments.

Based on the implications derived through the analysis of the business model for smart city services, five policy directions to be considered for a sustainable operation of smart city services are proposed. First, a differentiated approach to public service and private service is necessary. Second, the social impacts should be considered, and public support measures should be established. Third, a pilot project at the central government level is necessary. Fourth, people with expertise are necessary to assess the business model. Fifth, a dedicated organization and the manpower to handle the work related to smart city in the public sector are necessary. Given the five policy directions, two ways to improve the policies and institutions are proposed. First, an institutional measure to confirm the economic, social, and environmental benefits of smart city services is necessary. To this end, an evaluation system should be established to identify the operability of the smart city services that are being planned and the efficiency of operating services objectively, and improve the sustainability of the services. An evaluation of the business model at the planning stage may help determine the entity in charge of the operation and management of smart city services. An evaluation committee may be established as an organization in charge of evaluation, and the

evaluation committee may be organized by using smart city service support organizations, a smart city project council, or organizing a new committee. Then, professionals should be secured, and a dedicated organization should be established for the management and operation of smart city services.

The areas and types of services were limited in this study, as it looked at only smart city services of the recently planned smart city projects. It may be possible to categorize the business model for smart city services in Korea and identify elements for sustainable operation and management by analyzing the whole smart city services that are being provided in Korea. In addition, it is necessary to study ways to link the smart city service evaluation system, smart city certification system, and smart city service certification system. Standards and migration procedures including transfer of the right to run services should be studied with the expanded participation of the private companies in smart city service projects.

It is expected that this study will contribute to the avoidance of planning and establishing excessive smart city services and support for creating economic, social, and environmental profit by running services in a sustainable and stable manner. This study is also expected to help secure the feasibility of the expenses for operating and managing smart city services and the spread of smart city establishment.

Keywords :

Smart City, Smart City Service, Business Model, Business Model Canvas, Service Evaluation