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Determining Strategic Priorities for Smart City Development: Case Studies of South Korean and International Smart Cities

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Abstract: Increasingly, nations are engaging in smart city development projects. Smart city development aims to build urban areas with a wholesome quality of life with modern infrastructure capabilities (e.g., economic opportunities, cultural richness, and demographic-geographical balance), technological benefits (e.g., healthcare, education, government) and sustainability goals (e.g., clean, green, safe, and secure environments). This requires huge investments of resources and participation of diverse stakeholders, whose goals are often ambiguous and conflicting. It is not unusual that many of these projects are delayed because of a lack of consensus, which further adds unnecessary social costs and a waste of time and efforts. In this sense, determining strategic priorities for smart city development is crucial for achieving a set of integrative purposes in terms of resource allocation and social benefits goals. This paper aims to determine strategic priorities by examining multiple cases of smart city projects in Korea, Europe, and the U.S. A hierarchical strategic framework, which shows the vision, core values and strategic goals, is developed and proposed from the case studies. Lessons and practical implications are discussed for future study.

Keywords: sustainable innovation; case studies; smart city development; strategic framework; strategic priorities; Europe; Korea; USA

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1. Introduction

Since the formation of cities in medieval Europe, along with the words "stadtluft macht frei-city air gives freedom", cities have been gradually enlarging and expanding, constantly attracting larger numbers of people. Today, many megacities or metropolises can be seen with a population of more than 10 million. The urbanization rate refers to the percentage of the population living in a city out of the total population of a country, and the current global urbanization rate is expected to increase from 55% in 2019 to 68% in 2050, according to the World Population Prospects by UN [1]. In particular, the urbanization rate in Korea exceeds the global average. It is reported at 82% by the Korea Statistics Agency [2] and up to 90% by the UN's estimates [1]. As cities become larger and the population increases, various urban problems such as environmental pollution, traffic congestion, and energy shortages are intensifying. Increasingly, the concept of a smart city is accepted as an alternative to solve these problems.

Smart cities use advanced technology and innovation to solve these problems and improve the urban environment, leading to an improved quality of life along with greater prosperity and sustainability. Thus, a smart city may be more prepared to respond to challenges than a conventional or traditional city. According to the review of smart city history by GlobalData [3], it is considered that the first smart city was Amsterdam, when it created a virtual digital city in 1994. IBM launched its "Smarter Cities" marketing initiative in 2008. In 2011, a Smart City Expo World Congress was first held in Barcelona, and

since then, it has become an annual event charting smart cities' development around the world. In 2012, the European Commission established the Smart Cities Marketplace, a centralized hub for urban initiatives in the European Union. At present, it is estimated that over 165 cities from 80 countries are participating in smart city projects in one way or another [4].

A smart city refers to the entire city including a very broad and diverse range of elements. A strategic and systematic approach that sets the shape and development direction of a smart city is of utmost importance for effective and successful implementation. A strategic framework for a smart city is a hierarchical system that contains vision, core values and strategic goals. The vision presents the future that smart cities should have, and it is embodied in the core values and strategic goals which are established based on that vision. Examining the cases of smart city development in Korea and abroad, it can be seen that the vision, core values, and strategic goals pursued by each city are different, and accordingly, the goals and evaluation criteria that are prioritized in project execution are also different.

A review of previous studies on smart cities reveals certain trends and obvious weaknesses in smart city strategies. Although research on smart cities has been increasing rapidly in recent years, many studies only present the application of smart technologies such as Big Data and ICT [5–10] or case-dependent anecdotal episodes [11–15], and therefore fail to present a consistent and systematic strategic approach. Smart city development should increase the efficiency of resource allocation and utilization through selection and concentration through prioritization. The research on smart city development tends to be somewhat fragmentary and technology-focused [16] and does not adequately provide a framework for effective strategic goal setting.

The purpose of this study is to establish a smart city strategy framework that determines how to set priorities for the vision, mission, core values, and strategic goals in the planning stage to increase the possibility of success of smart city development. Multiple cities in Korea, Europe and the U.S. are examined, and a hierarchical strategy framework is proposed to determine the priorities of strategic goals.

2. Literature Review

This section presents a literature review of the concept of a smart city and research streams of the strategic approach to smart city development.

2.1. Conceptual Definitions of a Smart City

A large number of studies are focused on the concepts of smart cities. This stream of research attempts to define and discuss what "smart" means, what a smart city should aim to be, and why it is different from an existing city. The smart city has been defined in various ways since the first appearance of the concept in the 1990s. A range of conceptual variants is obtained by replacing "smart" with "digital" or another ICT-related word. Today, the term "smart city" is still an unclear concept and is used in ways that are not always consistent [17–21]. The International Telecommunication Union (ITU) defines a smart city as an innovative city that utilizes ICT to enhance the quality of life, the effectiveness of city operations and services, and competitiveness [22]. The International Organization for Standardization (ISO) defines a smart city as a resilient city that can handle all the challenges of a changing world while continuing to implement essential functions [23]. IBM, a leading global ICT company, has defined a smart city as a city that can collect, analyze, and integrate information, which is the key to a core system for operating a city using ICT [24]. According to the European Commission, a smart city uses digital technology to provide better public services for citizens, deploys resources efficiently to reduce environmental impact, and ultimately improves the quality of life of citizens and enhances the sustainability of cities [25]. In Korea, a smart city is legally defined as a sustainable city that provides a variety of urban services based on urban infrastructure in which construction, information and communication technologies are integrated [26].

Through these definitions, we get a glimpse of people's understanding of a smart city. A common explanation is a city that utilizes the means commonly expressed as ICT or technology. However, achieving the strategic goals of a smart city is context-specific and therefore they are different for each case. While private companies such as IBM emphasize the particular implementation methods such as data collection and analysis, international organizations such as ISO and ITU define terms in a general sense for social change. Although these two categories can find commonalities in that they emphasize technical elements, the goal definitions presented for practical implementation are significantly different for each region, country, or city. Table 1 is a summary of how different entities defined smart cities between 2009–2020.

Table 1. Definitions of Smart City.

Organization	Year	Definition
ITU	2014	An innovative city that utilizes ICT to enhance quality of life, city operation, service effectiveness and competitiveness
European Commission	2015	Cities that leverage digital technologies to provide better public services for their citizens, use resources more efficiently, and reduce their environmental impact to improve the quality of life for their citizens and increase urban sustainability
IBM	2020	A city that can collect, analyze, and integrate information that is the key to a core system for operating a city using ICT
Korean Smart City Law	2009	A city that provides smart city services anytime, anywhere through the smart city infrastructure built using smart city technology to improve the city's competitiveness and quality of life
ISO	2020	Improving the sustainability and resilience of cities to transform the services and quality of life for those involved (residents, businesses and visitors), how cities influence civil society, and how they are applied to collaborative leadership tools. A city that radically improves the components of city operations, how they work in city systems, and how they use data and integration technologies.

2.2. Strategizing Smart City Development

Since developing smart cities requires the involvement of diverse stakeholders and enormous resources, a strategic approach is required for effective development. A strategic approach aims to identify the long-term direction, and to define value priority through a systematic and hierarchical assessment of goals and trade-offs. Strategic studies for smart city development have been conducted from various perspectives. Three streams of strategic perspectives are examined in this section: smart technology adoption, smart city governance, and smart city strategy framework and implementation. Smart technology adoption. Technology is an important element to make a city "smart." This stream of research discusses adoption of advanced technology as a strategic issue and demonstrates the importance of using technology as a strategic option for smart city development. Technology-related issues examined are big data support [8], data management [7], technology adoption and investment [6,10,27–30], and system development [9]. This stream of research tends to be technology-centric and often overlooks important social issues from a strategic perspective involved in implementing technology in smart cities.

Smart city governance. Smart city governance is the process of interactions and decision-making by stakeholders over collective issues and problems surrounding smart city development. Smart city governance is very important for the strategic approach to smart city development since it is the management framework within which various decisions such as goal setting and resource allocation are made. This stream of research focuses on stakeholder involvement in smart city development planning and policy making. Various stakeholder groups are identified, such as citizens, business firms, academia, and politicians [31,32]. The importance of stakeholder's involvement and empowerment is emphasized [33–35] for the successful development of a smart city. Understanding the diverse views of various stakeholder groups and aligning them with smart city development strategies is also an important role of smart city governance [36]. Although this part of study adequately relates governance to a strategic approach, it is still fragmented and does not provide a coherent and systematic framework for setting and prioritizing strategic goals.

Smart city strategy framework and implementation. Smart city strategy is about how to develop smart cities more effectively. This stream of research deals with issues related to strategy development and implementation such as methodological framework [35,37–40], innovation and value creation strategy [41–44], and collaboration [35,44] to enhance sustainability and economic growth. The study of strategic frameworks has presented a planning process for effectively building smart cities by considering different contexts, sectors and service domains, as well as stakeholders and participants. Research on value creation has demonstrated the importance of collaboration and open innovation for implementing smart city strategies. A sound value creation strategy is critical to strengthening competitive advantages and driving economic growth for smart cities. While this group of research attempts to provide a holistic, complete, and integrative approach to smart city development, it often overlooks the importance of prioritizing the diverse demands of different stake-holders in strategy development.

A strategic approach is required to effectively develop smart cities. Existing smart city strategy studies try to present a framework from an integrated perspective in promoting and implementing smart cities. However, there are insufficient studies to identify the development direction through systematic and hierarchical strategic goals. In particular, it is difficult to find studies that have identified the priority of strategic goals through hierarchical presentation.

3. Research Design

In order to understand the strategic system and core goals of a smart city project, eight smart city cases in Korea, Europe and the U.S. were investigated, and a hierarchical strategic framework was prepared. The table below summarizes the contents of the eight cities surveyed and analyzed in this study. The research design is to understand how different cities in Korea define their strategic priorities according to their contextual differences. This article aims to examine and assess how these cities defined and determined their strategic priorities (e.g., value proposition, demographic needs, locational specificity, and resource availability).

3.1. Case Studies of South Korean Smart City Projects

Four cities were selected for Korean cases. They were promoted as the pilot and exemplary smart city projects by the Ministry of Land, Infrastructure and Transport of Korean government. They are the cities of Sejong, Busan, Daegu, and Siheung [45–48]. The vision, core values, and strategic goals of the cities were examined and are presented in Table 2.

Table 2. Vision, core values & strategic goals by cities (South Korea).

	Sejong	Busan	Daegu	Siheung
Vision	A smart city as a sustainable platform to enhance citizen happiness and provide opportunities	A global innovative growth city where nature, people, and technology meet to advance future life	A leading global city with both industrial growth and citizen happiness	A smart city for a safe and convenient daily life
Population	Less than a half million	More than 3 million	More than 2 million	Less than a half million
Core Values	• Data management • Human centered • Eco friendly • Citizen participation	• Human centered • Innovation & growth • Sustainability • Quality of life	• Future technology & industry base • Job creation • Low cost & high efficiency	• Citizen centered • Quality of life • Sustainability • Safety • Innovation
Strategic goals	• Intelligent smart city • Innovative gov-ernance • Customized service	• Growth through innovation • Global cultural mega-center • Global logistics hub	• Human centered • Citizen participation • System collaboration • ICT technology	• Social inclusivity • Quality of life • Continuous innovation • Citizen participation

Figure 1 shows the names of smart city projects and their locations. For fair representation, cities are chosen to promote the ecosystem of smart cities in their respective regions. These cities (Siheung, Sejong, Daegu, and Busan) are spread out to represent different regions in South Korea. These cities are different in terms of size, the scope of smart city development and the role in the region.

Figure 1. Demonstrative smart city projects in South Korea.

3.2. Case Studies of International Smart City Projects (Europe & USA)

Korea is not the pioneer of the smart city movement. Therefore, four Korean smart cities carefully conducted benchmarking of key cities in the U.S. and Europe, which have a longer history of developing and implementing the concepts of smart cities. Four cities in Europe and the U.S. were selected as the best smart city cases and examined. They

are Amsterdam, Vienna, Barcelona, and New York [49–53]. The vision, core values, and strategic goals of the cities were examined and are presented in Table 3.

Table 3. Vision, core values & strategic goals by city (Europe & USA).

	Amsterdam	Vienna	Barcelona	New York
Vision	A city with a superb ecosystem of socio-cultural-technological synergies	A smart city with a rich cultural heritage with modern technologies for people of all ages	A smart cultural city as a platform for good life in sustainable environment	A global mega-polis with opportunities for diverse growth, equity, sustainability, resilience and safety
Core Values	• Resident participation • Public-private cooperation	• Quality of life • Sustainability for resources • Innovation	• Citizen participation • Improvement of citizens' quality of life	• Public-private cooperation • Build a new platform for quality of life
Strategic goals	• Secure digital infrastructure • Public-private cooperation • Integration and collaboration with citizens • Education and employment • Regional cooperation network	• Efficient energy use • Building innovation leaders • Solid economy and education • Guaranteed quality of life	• Strategy setting • Long-term vision definition • Define an action plan • Citizen participation • Stakeholder integration • Build partnerships	• Improvement of living and working environment • Efficient achievement of commerce, transportation, education, environment, safety, etc. • Solving urban problems • Strategies for technology implementation

3.3. Identify the Priorities of Strategic Goals for Smart City Development

A strategy is defined as a policy or action plan designed to achieve the goal of a certain group. Just as there are multiple functional areas to run a city smoothly, a smart city consists of multiple service domains. Depending on how the smart city strategy that determines the direction of the smart city project is set, the service domain to focus on and the selected project will change, the budget support will change, and the resulting smart city project performance will be different. An effective smart city strategy should be established to maximize the targeted benefits and performance of the smart city business. A smart city project implemented without an appropriate and effective strategy may waste resources and make it difficult to achieve expected benefits, and furthermore, it may lead to the failure of the smart city project. In this study, multiple cities in Europe, Korea and the U.S. were examined to extract a common strategic framework for effective smart city development. A review of the South Korean, European, and American smart city cases produces the core values and strategic goals commonly used for smart city development, and their hierarchical relationships are summarized as follows:

Figure 2 shows the hierarchical strategy processes. Tier 1 is about formulating a vision or mission that defines objectives of the smart city. Tier 2 is the next step of defining key value propositions (core values) such as quality of life, sustainability, innovation and growth and competitiveness of the city. Tier 3 is to clarify key performance indicators (strategic goals) that support Tier 1 (vision and mission) and Tier 2 (core values).

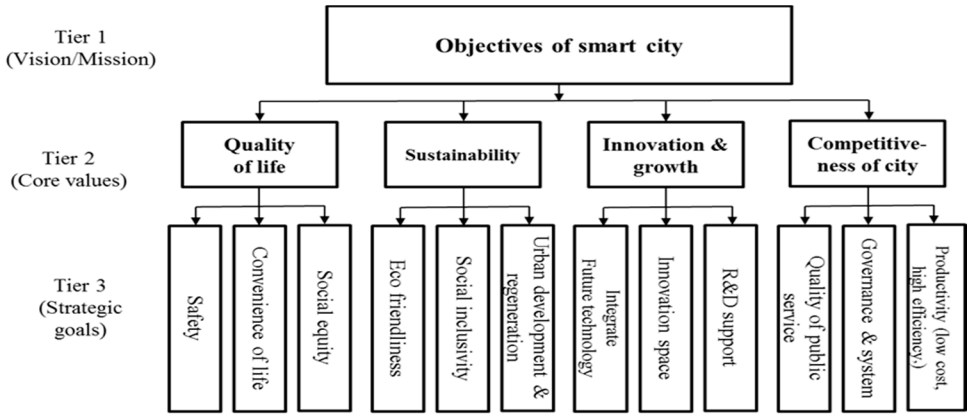

Figure 2. Smart City Strategic Framework.

4. Four Groups of Stakeholders for Smart City Development

Today's smart city movement is a bottom-up approach through which the perspectives of various stakeholders are considered in arriving at a consensus, in contrast to a public-led top-down method that dictates a particular vision of the city to all people involved. It is based on the establishment of a horizontal cooperative system among stakeholders in each field of smart city service. Stakeholders participate in the overall urban service process, from deriving service demand to service supply and operation management. Identifying the unspoken needs and respecting the aspiring expectations of diverse stakeholders are important priorities of policymakers and strategic planners. The four major groups of stakeholders are identified as the public, businesses, citizens, and academia as shown in Table 4.

Table 4. Four Groups of Stakeholders for Smart City Development.

	Public	Business	Academia	Citizens
Portfolio level	• Policy makers who initiate, plan, execute smart city development • (ex) Central, City & Local government	• Business firms in various industries that participate in smart city development such as construction, energy, healthcare, IT, transportation, etc. • (ex) Investors, SPC (Special Purpose Corporation), Consortium	• Experts who provide professional knowledge and advice for smart city development (ex) University, Research Institute, Industry Associations	• Prospective residents and local business people in the smart city (beneficiary and end-users of smart city) • (ex) Citizens, Local business people
Program level	• Managers who are in charge of planning & implementing smart city domain programs • (ex) Department directors in city and local government			
Project level	• Managers who are in charge of plan, execution and delivery of solutions • (ex) Front line officials for smart city projects			

4.1. Public Group

In the past, many city-related projects were led by the public, such as central and local governments, but in today's smart cities, the role of the public has changed. It is a form of pursuing a project promotion system through public-private or private-oriented cooperation. A government-public-private special purpose corporation (SPC) is also formed. The central government and the public sector play the role of amending laws and providing budget support. Local governments supervise smart city-related policy projects in cooperation with the central government, establish and operate public services, and build infrastructure.

The central government has several committees under its umbrella for the creation and diffusion of smart cities from a national strategic point of view to advise, deliberate, and adjust government policies such as legal systems, standardization, external cooperation, and smart city promotion strategies. Local governments also form a council between local governments that promote the construction and operation of smart cities to ensure mutual cooperation and strategies for the spread of smart cities and industrial promotion.

4.2. Business Group

Private companies play an important role in providing a range of ideas related to smart city technology and developing comprehensive solutions to solve city-wide problems based on these ideas. Korea is continuously expanding the 'Smart City Convergence Alliance' at the government level so that more private companies can actively participate. This convergence alliance aims to create a smart city led by private companies and enables technological exchange by creating conditions for various innovative activities of private companies in the smart city field. It develops smart city-related business models, centering on companies participating as member companies and helps improve the system.

Private companies are the main agents of implementing various new technologies incorporating ICT in a wide variety of fields (e.g., transportation, safety, energy, medical care, etc.), provided as city services in smart cities. Therefore, the participation of innovative companies is recognized as an important success factor of smart city implementation. In particular, based on a sustainable profit business model, it is possible to play a role in providing public services such as safety and the environment. Through this, qualitative growth can be promoted as a part of corporate social responsibility (CSR) and environmental, social and governance (ESG) management required by companies these days, and the revitalization of the smart city industrial ecosystem can also be expected.

4.3. Academia Group

The main role of the academia group is to provide the capabilities of each institution in various fields such as policy discovery and institutional improvement for smart city expansion, technology development, professional manpower training, and overseas export support. It plays a role of leading communication and technological development with industry, academia, research, and the private sector based on the expertise of each institution. This group consists of universities, government-funded research institutes, and affiliated research institutes classified as public institutions. The group supports smart city projects through various activities such as fact-finding, research and development, and policy discovery using professional manpower and facilities to activate smart city services.

Another important role is to participate as the main body of the business that develops and demonstrates technologies and solutions provided as actual smart city services. The 'Smart Campus Challenge', one policy project, is a smart solution demonstration project led by universities with the participation of companies and local governments to experiment with innovative ideas on campus, in nearby shopping centers, and in the city center, with the goal of commercialization of the technology or service. In addition, four-year universities can open and operate smart city-related departments, track and nurture innovative smart city talent, and operate a curriculum with master's and doctoral education programs with the support of the government.

4.4. Citizen Group

Citizens are the actual users of all services and technologies provided by smart cities. A smart city does not provide services unilaterally through urban infrastructure construction. The goal of a smart city is for citizens to participate as members with a sense of ownership. Therefore, the perception that the most important thing in a smart city is the person who uses the service is emerging. No matter how advanced technology is applied to a city, it is meaningless if it does not provide benefits or convenience to the citizens. This is why people-centered smart cities are on the rise.

The essence of a smart city is that citizens, the real users of services, directly use and interact with smart technologies as they become familiar with them. Without citizen participation, the sustainability of smart cities cannot be guaranteed. Therefore, two-way operation is important, not one-sided operation of the public, such as the central government and local governments. A characteristic that can be seen in many examples of smart city implementations today is that users' opinions are collected through citizen surveys, and citizens directly participate in the project. The role of active and participatory citizens is required to build a smart city. In fact, when selecting various technologies and solutions to be provided as smart city services, each city's "smart city plan" identifies citizens' requirements or needs through opinion surveys in advance and decides on a service pool to be provided.

5. Achieving Shared Understanding and Commitment to the Strategic Framework

A strategic framework encompasses the formulation of vision and mission as a team, achievement of shared understanding of core values, and agreement on mutual commitment to action plans. The following three-step process is proposed in this paper:

5.1. Formulation of a Strategic Framework (i.e., Joint Planning)

Various stakeholder groups with different goals and inclinations are involved in smart city development, and these groups must work together to form a cross-functional team. For these diverse groups to collaborate and work effectively, they need a strategic framework in the initial joint planning stage [54–56]. The strategic framework will bring these diverse groups of stakeholders together by providing a clear sense of direction and focus on the form of vision and mission for smart city development projects. Also, each smart city project may have different goals and directions due to geographic and regional differences. It is necessary to first define the concept, goals, basic principles, and activities of the smart city as a framework for explaining and solving the complex system of a smart city.

5.2. Communication of the Strategic Framework (i.e., Shared Understanding)

Once a strategic framework is established, it should be communicated to all the members of the stakeholder groups. This process will have the effect of achieving shared understanding of the core values among the members of the cross-functional teams. Various stakeholders exist in the smart city project. The perception of the goals, core values, and vision of a smart city is different according to each person's interests and inclinations [6,55]. It is important to develop a common understanding of the strategic framework that is agreed upon by coordinating and adjusting it [54,57,58]. Communication-based cooperation should be established to understand the goals according to the hierarchy and roles and to support the linkage between the higher-level goals and the lower-level goals. Effective communication is possible only when the responsibilities for implementing the strategy are clearly defined and the roles of each stakeholder group are understood.

5.3. Commitment to Strategic Framework (Mutual Commitment)

The third and last step in the process is to agree on mutual commitment to action plans containing the strategic goals. Implementing a strategy requires each stakeholder group to share values and to make commitments to the developed and agreed-upon strategy [59–61]. Effective strategy execution is about aligning all the members' activities around a common core theme [62]. It is also about creating the right organizational context, so that all stakeholders and participants of the smart city projects are committed to making the strategy work. Therefore, in essence, implementation of a strategic framework is about creating commitment. Commitment as a process may involve several steps, such as committing resources, setting up organizational structures and control systems rather than just forcing people to act upon the proposed ideas. These follow-up actions with mutual commitment will transform strategy into a concrete reality.

Previous research on strategic framework has mostly focused on one or two steps among the three steps discussed above. In contrast, the framework proposed in this paper encompasses all three steps in a hierarchical order, and thus presents a more complete and more integrated framework. Tier 1 shows that the vision and mission of a smart city are established in the initial stage by the joint planning of stakeholders. Tier 2 demonstrates that core values are defined and communicated to stakeholders. Tier 3 provides more detailed strategic goals that can serve as performance indicators during the execution stage.

This study is aligned with previous studies in that it emphasizes the importance of coordinating diverse stakeholder groups in the early stages of planning [54,56], seeks to combine multiple and conflicting strategic choices [6,55,58] through stakeholder participation [40,60,62], and systematically links the higher-level missions and visions with the lower-level strategic goals of the various functional areas of a smart city [38,39]. Furthermore, this study advances prior research by hierarchically presenting the core values and strategic goals extracted from multiple case studies so that the diverse interests and opinions of stakeholders can be effectively and systematically integrated to establish a smart city strategy.

6. Conclusions and Discussion

The strategic framework proposed in this study provides a theoretical development in smart city-related research. Existing smart city strategy-related research mainly focuses on case studies with anecdotal and fragmentary suggestions, while there is a lack of a strategic approach to smart city development with a focus on prioritizing strategic goals. This study establishes and presents a strategic framework with a focus on planning and execution in smart city development and has the following theoretical and practical implications.

6.1. Theoretical Implications

In view of increasing research interest in smart cities, this study provides a strategic framework for conventional cities to formulate plans for effective action. While existing studies on smart city strategy frameworks point out that each city has different cultural background and social environments [37,38], and diverse stakeholders with conflicting goals [35,39], they have not suggested a way to integrate these goals and reflect them in smart city development strategies. Some studies [38–40] proposed a methodological planning framework with a stage-by-stage process, but without actual content, i.e., no description about what strategic goals to integrate, compromise and achieve in the end.

Our strategic framework proposes a holistic and practical method to integrate a diversity of interests and to resolve conflicts among stakeholders in the planning stage of smart city development. The particular focus is about how to pursue strategic priorities for cities by reflecting the interests of diverse stakeholder groups with different goals. The framework is the result of systematizing the mission, vision, core values and strategic goals by examining the cases of eight cities in Korea, Europe, and the USA. It is unique in that it uses a hierarchical approach such as Tier 1 (vision and mission), Tier 2 (core values), and Tier 3 (strategic goals). The core values and strategic goals cover a wide spectrum of issues and ideals suggested for a smart city such as quality of life for citizens, sustainability of the natural environment and future generations, innovation and growth capability for industries, and competitiveness of the entire city.

In the 21st century, most of the rapidly growing mega cities will be in Asia. Just as emerging economies have rapidly implemented digital infrastructures without heavy capital investments, the very idea of smart cities is well suited for these emerging economies that are wrestling with conflicting social and cultural needs—rapidly growing population, congested traffic jams, high levels of pollution, and a lack of capital resources. By definition, the smart city movement is how to build the cities of the future by using available technological resources. This study is theoretically meaningful because of its clarity of structure and practicality of applications. This strategic framework provides the next level of an

implementation roadmap for a function-oriented conceptual design with technological application perspectives on which many previous studies have focused.

6.2. Practical Implications

This study presents a strategic framework that various stakeholder groups with ambiguous and conflicting goals can use to reach consensus in smart city development projects. The strategic framework has the effect of providing a systematic process of setting priorities and sharing values for the purpose of smart city development projects. Through this, decision-making on policy direction will be made more quickly, and as a result, efficiency of resource allocation and social benefit goals can be achieved more easily. The strategic framework will facilitate collaborative work of cross-functional teams with diverse perspectives and functional objectives about smart city development. It will bring them together in the early stages to develop a shared sense of the overall vision and mission for smart city development.

6.3. Future Research

For the purpose of this article, we only selected and presented eight cases from Korea, Europe, and the U.S. Through an extended period, more cases could be examined to verify the strategic framework proposed in this study. In future research, it will be meaningful to empirically verify the effectiveness and field applicability of the strategic framework, which is the result of this study. In the process, it will also be necessary to identify perception differences among various stakeholders, and how to harmonize this and reflect it in policies and strategies. Ultimately, this will help to enhance cooperation of the cross-functional team members for smart city development.

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