Preparing local governments for "smart cities"

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Received: February 10, 2024 *Revised: April 12, 2024* *Accepted: April 30, 2024*

Abstract

Raising the status of local government bodies to municipalities and granting independent powers to areas in many respects. It is a crucial starting point for the country's urban development. The people's needs and the ability to solve problems in the area in a timely manner. This will improve the quality of life and people's well-being. Preparing local governments for smart cities is a complex process that requires careful planning to be able to adapt to the changes that are happening in a rapidly growing and changing world. These areas include: 1) promotion from the central state; 2) decentralization to the locality; 3) development of intelligent leaders; and 4) citizen participation and equality in smart cities. It also strengthens connectivity and technological excellence that can appropriately and effectively solve the problems facing humanity today in a sustainable way.

Keywords: preparedness; local government; smart city

Meaning of "Smart City"

"Smart City" According to the Digital Economy Promotion Agency (Depa), "Smart City" is a city that utilizes technology and innovation to increase the efficiency of city management, providing services to citizens, reducing costs and reducing the use of resources, as well as requiring good design to promote the participation of businesses and citizens in the development of the city into a modern city, a sustainable livable city, and enhancing the quality of life and happiness for the people.

1. *Adopt technology to manage water, air, waste, and green spaces in accordance with the standard values or not.* Smart environment indicators are cities that take into account environmental impacts and climate change conditions. Therefore, technology must be used to help in management such as water systems, waste management, climate care systems, disaster monitoring, and promoting resource conservation, in which it is often seen whether the quality of water, air, waste, and green areas is increased to meet the standard values and the amount of greenhouse gases generated from the services provided by public health facilities. Is there a

decrease in CO2 emissions? Examples of technology adoption include using the City Digital Data Platform to predict and coordinate disasters. Sens City, a tool to help monitor urban climate impacts

2. *How can technology be used to help increase people's income*? Smart economy indicators refer to cities that use digital technology to create added value in the economy and manage resources efficiently. They examine whether the population's annual income increases in accordance with certain criteria. Examples of technology adoption include using the 'FAHFON' platform, a smart agricultural technology that helps with weather forecasts and improves farmers' planting planning.

3. *Is there an increase in energy efficiency?* Smart energy indicators are cities that manage energy efficiently, balancing energy production and energy consumption in the area to ensure energy security and reduce dependence on energy from the main power grid, which is measured by increasing energy efficiency and renewable energy as required. Examples of smart city upgrades in the field of smart energy are Smart Grid, a one-stop smart power transmission grid system that helps manage the production and distribution of electricity to be sufficient to meet needs, or the use of clean alternative energy such as solar, wind, hydro, etc.

4. *How are government services being improved?* Smart governance indicators are cities that apply innovation or technology to develop government services to facilitate citizens' access to government information, transparency, and participation, which is measured by the proportion of citizens accessing services through digital channels and participating in the development of public services. Examples of public administration being elevated to Smart City include complaining about problems via the Line Official Account, One Stop Service, and installing outdoor LED screens to present information.

5. *What are the guidelines for building public health systems and ensuring public safety?* Indicators in the field of smart living Smart living refers to the development of facilities according to the principles of universal design by applying technology to ensure the safety of life and property, as well as good health and quality of life. Examples of developing smart living in Smart City include the design of buildings with automatic lighting on and off and the installation of CCTV cameras. These include CCTV, the City Digital Data Platform for patient monitoring and emergency assistance, and the QueQ application to book patient queues in hospitals.

6. *How is technology used to manage traffic and transportation?* Indicators in the field of smart travel and transportation Smart Mobility is a city that uses technology to develop traffic and transportation systems to increase the convenience and safety of travel and transportation by using criteria to measure satisfaction with public transport or traffic transportation systems and the death rate from walking on the roads according to certain criteria. Examples of smart city enhancement by adopting technology in traffic and transportation systems include the use of a city digital data platform to view traffic conditions in real time, payment for public transport services through applications or online systems, etc.

7. *Has it encouraged and provided opportunities for people to develop their knowledge and skills?* Smart people use technology to develop knowledge and creative skills, promote public participation, and create an environment conducive to learning, all of which help to reduce social and economic inequalities. By adopting technology in this area, examples of smart city

enhancement include supporting and encouraging listening to online streaming, YouTube, podcasts, and so on.

Local government organizations' Smart City Development Policy

The smart city concept is one of the urban development ideas that emerged in the 21st century. European and American countries are facing a problem of very high socio-economic inequality. In addition, there are many people who do not have access to public infrastructure and utilities. As a result, governments in Europe and America are trying to find a solution. And one of the most popular methods of urban development is smart cities, so the state has adopted information technology to connect to the internet and telecommunication networks in the city to facilitate the people. As a result, the smart city concept has become so popular that it is now one of the solutions to urban problems in this era (Ekachai Sumali and Chaiwut Tanchai, 2019).

The essence of smart city development lies in the shift in the new urban development paradigm from the old one, where we focused on physical urban development, to urban development that takes into account the needs of the people more comprehensively. Whether it is social, economic, public health infrastructure, educational environment, etc., In addition, the smart city development approach places emphasis on laying out the city's vision. Strategizing and directing the city forward In conclusion, the development of smart cities requires the analysis of the problems and needs of the people in the city and then the planning and design of the city in accordance with the problems and needs of the people. Area-based development involves applying information technology in parallel. In addition, the successful development of smart cities requires understanding their essence in three parts:

1. Smart cities must be born from the needs and demands of local people because of the city's vision and strategy to be a smart city in what aspects. Furthermore, policymakers must truly understand local people's problems and needs, as well as how they, as landlords, want to see their cities grow and develop.

2. Smart cities are defined as policies that must be implemented urgently. Have a clear, detailed plan or project. What entities will need to be involved? Local government organizations, in particular. We are a local agency that is closest to the people. Which policies are directly responsible for providing public services in the area?

3. Smart cities must not be just government policies that come down from the center. But it must come from the cooperation of various sectors in the area. There are local government bodies and central government agencies. Businesses and citizens must work together to drive the direction of smart city development.

Cities that have successfully evolved into smart cities

1. Barcelona is a smart city. Barcelona, Spain It is recognized as a very prominent smart city in Europe. The Municipality has placed great emphasis on developing Barcelona as a smart city in terms of safety, security, and security. Local governments have adopted information

technology, also known as the Internet of Things (IoT), to increase urban management efficiency and improve the quality of life for Barcelona residents (Ministry of Foreign Affairs, 2017).

Barcelona's local government has created a technological action platform called the City OS Platform, which is a system for collecting and analyzing city data. Utilities and public utilities, such as traffic All data is then connected to the processing system and sent to the Barcelona Local Government Operations Center. This enables local governments to deploy real-time data instantly. In addition, the operating system is connected to other systems in Spain.

At present, Barcelona has a number of projects that support the creation of smart cities, such as the installation of sensor systems in trash cans. When the bins are full, the local government will send staff to collect garbage for a smart parking spot search project, an eco-friendly electric bicycle project, a solar power project, etc. Dialogue is a question-and-answer system to provide advice to the public. It helps local governments reach more people and, at the same time, allows citizens to participate in the management of government databases. This allows local governments to gather information about citizens' needs and use that information to design city policies that truly meet those needs.

The Barcelona Smart City example reflects the city's development to become one of the top smart cities in Europe due to a key factor: the ability of local governments to manage cities effectively. The city's vision and strategy for which direction it wants to develop will start with infrastructure development. The public utilities and public utilities of the city should be developed first, and then the government service system will be developed to better meet the needs of the people and, more importantly, promote the process of participation of the public sector in urban development together with the government. By creating an identity in each aspect of the city through a process of participation from all stakeholders, these are the key factors that have led to Barcelona becoming a model. The smart city development is extremely striking and interesting.

2. Smart City: City Fujisawa. The local government of Fujisawa City, Japan, recognizes the importance of smart city development due to the rapid growth of cities. It has a more dense population. The city is also home to a large population of latent people. As a result, the local government's expenditure budget per capita has increased. Meanwhile, local revenues and federal subsidies are not keeping pace with the tasks localities are facing. Furthermore, the central government acknowledges various problems in each area, such as an aging society and natural disasters. Resource shortage, etc. As a result of all of these problems, an agency was established with the cooperation of large enterprises. Local entrepreneurs and JSCA research agencies carry out joint planning to develop Fujisawa City into a smart city (Smart Town, 2019).

Fujisawa City started as a collaborative urban design. The focus is on clean-energy city management, which leverages clean energy, renewable energy, and housing management. The local government has therefore begun the process of pulling in an industry cooperation network. The government, the public sector, and JSCA research institutes have come to integrate the framework. Issues are studied in the area. This has led to projects that have received cooperation from all sectors, such as the installation of solar panels on every roof. When the electricity produced in each household is not used up, it can be sold back to the electricity operator agency, which uses cars and bicycles to generate electricity. The state will also set up charging points in public areas and install CCTV cameras to maintain security throughout the city. In addition, the local government of Fujisawa City has a further goal: to create a livable urban society. It is a

society where people in the community have good relationships with each other and live happily together.

Fujisawa City has become one of the world's smartest city development models, capable of meeting the basic needs of urban living. The three areas are smart community, smart space, and smart infrastructure, which can link environmental, residential, and modern information technology development.

3. Vienna, Austria, is a smart city. It has been named the Most Liveable City for several consecutive years, from 2010 to 2019, and has also been recognized as a model of global urban development. If you look back in time, Vienna experienced climate change. Having experienced floods for more than 20 years (1950–1970), the Vienna local government invented the city's flood protection system, also known as the Vienna Danube Island, to act as a flood protection island.

Around 2001, the Mayor of Vienna announced the Smart City Wien Policy, a policy that aims to design and develop the city in all aspects, especially infrastructure development. This is to involve all sectors of the city in strategy formulation. The Smart City Wien project's vision for the city has four main goals: 1) to be the city with the most modern technology; 2) to be the city with the most ecological standards; 3) to be a socially responsible city; and 4) to be the city that focuses on the most public participation. A key component of the plan is participation from all sectors in the city. Participants were able to participate in the meeting to discuss six topics related to urban development, namely population development, urban environment, community economy, urban management, and transportation, as well as various projects that support the emergence of Vienna smart cities, such as the Wiener Linien Smart City and the City Bike project, while the Health and Social Smart City has a project to pass information to the elderly through tablets or a green classroom project for children, etc. All projects may involve multiple agencies or sectors. However, all projects and sectors share the same goal of supporting Vienna's vision of creating a smart city.

A particularly interesting aspect of the Vienna Smart City building is its focus on the process of participation by all relevant sectors. The local government is the primary administrator, and it distributes duties to stakeholders in various fields. Participate in Vienna's development, such as by having a consulting firm conduct contact, communicate, and provide information to the public. State urban development agencies, for example, take over development planning. These submissions reflect efforts to bring all relevant sectors into a sense of shared ownership of the city. To drive further successful development of the Vienna Smart City.

Preparing Local Governments for Smart Cities

Local governments are also ready to develop smart cities without making much progress. In addition, the development of smart cities in some dimensions still has a low level of readiness for development. But urban development has become a great priority. Because living in the city will continue into the future. We may face many crises, such as epidemics, natural disasters, and urban bombings, which result in many problems. Therefore, the development of smart cities is a solution for all sectors of society to come together to think about and find ways to promote them. (King Prajadhipok's Institute, 2020)

1. Central State Promotion. The government should formulate a smart city development strategy by decentralizing management at the local level, also known as area-based development,

so that local government organizations, communities, and civil society networks can participate in the development of smart cities. In the area, they jointly determine the direction and guidelines for the development of smart cities that are appropriate to the context in their area or use the area as a stand, which will lead to a real response to the problems and needs of the people and communities in the area. The central government is in charge of linking and aligning smart city development strategies at the local and national levels. and set standards for smart cities in each area so that local governments can implement the standards, which will bring maximum benefits to the people. In addition, the state must support the development of necessary infrastructure for local government organizations throughout the country. In particular, the thorough and efficient implementation of digital technology and internet network systems at the local level. In addition, the central state must provide advice, knowledge transfer, and technology management guidelines in a systematic way; not different people think, different people do, but it must integrate work and technology systems that are interconnected.

2. Decentralization to localization. Local government organizations are agencies that know and understand the problems and needs of the people because they are closest to the people in the area. They can analyze the area's potential, strengths, and weaknesses, determine its advantages, and formulate smart city development strategies to achieve practical results. At the same time, the state can act as an advisor to local government organizations by directing the linkage and alignment of smart city development strategies at the local level with the national level. and set standards for smart cities in each area for local governments to implement standards, which will bring maximum benefits to the people. According to the survey results, local government organizations need the most budgetary support, followed by technology systems and personnel upskilling.

So the development of smart cities should start locally, just like any other public service arrangement. Authority To carry out tasks related to the provision of public services and various forms of public services, power must first be distributed to the administrative unit closest to the people, i.e., the local government body. Meanwhile, central states should play a strategic role at the national level, setting rules and standards.

3. Develop intelligent leaders. At the local level, successful smart city development must begin with city leaders or administrators. This has greatly aided the city's development toward its goals. Driving smart cities in a concrete way requires local executives to have a clear vision of smart city development as a guideline for their leaders' progressive vision.

1) Becoming well-rounded and knowledgeable That is to say, they know the context in their area very well. Thoroughly understand people's problems and needs, and be well versed in global events or situations. National and local levels will have an impact on their cities.

2) Seeking new knowledge and experience from individuals, organizations, or agencies, both inside and outside the country.

3) Ability to apply by bringing new knowledge. New experiences or existing wisdom in the area will be applied to benefit.

4) paying attention to unexpected things with the belief that they may be useful or have the ability to turn a crisis into an opportunity.

5) Knowing how to prioritize urban development issues.

6) Listening to practitioners' opinions

7) Learning from mistakes and using them as lessons for urban improvement.

8) The ability to analyze the situation Predicting the trends and impacts of upcoming events, as well as creating new opportunities for urban development.

9) Decisions based on the rationality principle

10) Ability to coordinate and establish cooperation outside the organization for long-term benefits.

11) Courage to change or experiment with new things, even if you don't know if it will produce good results.

4. Create public participation and equality. Citizens should have equal access to technology as city owners. If the state drives the smart city development policy based on area-based management and decentralizes management to the area-based level, successful smart city development will require cooperation between local government organizations. Government agencies Private agencies Community and people However, making smart cities successful or concrete is not the ultimate goal, as long as the state aims to develop advanced and modern technologies. But people don't have access to technology; they don't have internet access. In the end, it was not possible to successfully develop a smart city. Therefore, the development of smart cities is sustainable. Citizens, as city owners, must have equal access to information technology.

Encouraging citizens to fully participate in driving smart cities in every process. These include joint thinking, planning, co-implementation, joint monitoring and evaluation, joint benefit, and joint responsibility. In the end, it will inevitably result in citizens feeling ownership of the smart city. Because of the public's participation. The development of smart cities contributes to the sustainable development of smart cities for several reasons. The development of smart cities should be characterized by comprehensive public participation from the beginning to the end of the process. as follows

1) It starts with the emergence of self-consciousness and considers one's duty as part of society. The local community in which they live.

2) Jointly think about the needs or development issues, causes, solutions, and prioritization of problems or development issues.

3) Jointly plan operations by planning the division of labor, duration of operation, and provision of resources used in operations.

4) Co-operate the people participated willingly and with full force, according to their own knowledge and abilities.

5) Jointly monitor and evaluate the results. In order to achieve the goals, there are channels for the public to participate in investigating obstacles and jointly solving them.

6) Joint Benefit: People who participate will receive mutual benefits, which do not have to be in the form of money. It can be happiness, satisfaction, improved well-being, or a better quality of life. Involving the public in all smart city development processes will lead to meaningful participation, resulting in sustainable smart city development.

International research on local government organizations' smart city development

Cities around the world are facing many challenges, so smart cities have become an important way to develop cities. Local government organizations (OPPs) play an important role in driving the development of smart cities. This article focuses on important lessons from abroad

about the role of the OPP. In the development of smart cities, there is foreign research related to the development of smart cities by local government organizations. as follows:

Xue, X., & Yao, F. (2020). It found that local government organizations play an important role in initiating, piloting, and driving smart city development through strategies such as setting up specialized units and allocating budgets. Building partnerships with various sectors and promoting public participation. This research also highlights challenges faced by local governments, such as resource scarcity. Knowledge and expertise

Hollander, S., & Calofiglio, G. This research compares the smart city development approaches of local government organizations in Europe. It was found to be diverse in terms of goals. It depends on each city's context and specific challenges. This research also highlights key factors contributing to the success of smart city development, such as public, private, and citizen partnerships. Public participation, measurement, and evaluation

Kozma, L., & Hancock, B. (This research examines a case study of smart cities in the United States.) It found that local government organizations face many obstacles in the development of smart cities, such as resource shortages. Knowledge and expertise Legal and regulatory barriers Public opposition and technical challenges However, this research also points to stimulants that promote the development of smart cities, such as citizen pressure. There is a need to improve the efficiency of public services.

Research conducted abroad reveals the following key lessons:

1) OPP: Clear vision. A clear vision is needed for the development of smart cities. The vision should identify goals, strategies, and success metrics.

2) Public participation: The public should be involved in setting goals. Smart city strategies and projects

3) Data integration: information from the OPP's various departments. They should be linked to one another for analysis and effective use.

4) OPP: technological skills and knowledge. It is necessary to develop the skills and knowledge of personnel to support the development of smart cities.

5) Sustainable financing mechanisms: smart city development requires a significant investment. It is necessary to find ways to raise funds to support these investments.

Recommendations for Smart City Development for Local Governments

1) Lessons learned from abroad There are the following suggestions for Thailand:

2) The government should encourage the OPP. Develop a vision: The government should allocate budgets and resources to support the OPP. In developing a vision

3) The government should promote citizen participation. The government should provide a platform for citizens to participate in setting goals. Smart city strategies and projects

4) Governments should promote data integration: Governments should establish standards and guidelines for data integration.

5) The government should develop technology skills and knowledge. The government should provide training and skill development for OPP personnel.

6) Governments should find ways to raise funds: Governments should consider legislation and incentives to attract private sector investment.

Conclusion Smart city development is a big challenge, but it is also a great opportunity to improve people's quality of life, develop the economy, and conserve the environment. The OPP's role It is critical to drive the development of smart cities. extremely

Factors influencing the success of smart city development by local government organizations

Factors influencing the success of smart city development by local government organizations. According to various research and studies, the key factors affecting the success of smart city development by local government organizations can be classified as follows:

1) *Management and administrative factors.* Having a clear vision and strategy: A clear vision of the smart city that needs to be developed is required. The vision should clearly state goals, strategies, and success metrics. OPP: There should be a comprehensive smart city development plan. Define projects, allocate resources, and monitor performance. The OPP has a visionary leader. Visionary, committed, and capable leaders are needed to drive the development of smart cities. Public participation: The public should be involved in setting goals. Strategies and projects for smart cities A forum should be set up for the public to express their opinions. Make suggestions and participate in the decision-making process. Good Governance: OPP It needs to be managed with good governance and transparency. Verifiable and efficient. The presence of a coordination mechanism: the OPP. There needs to be a coordination mechanism between various agencies, both within the organization and with other sectors such as the private sector, civil society, and academia.

2) *Technology factors.* OPP is a good information and communication technology (ICT) infrastructure. A good, comprehensive, and up-to-date ICT infrastructure is needed to support the use of technologies such as the Internet, cloud computing, and big data. Having an integrated information system (OPP) An integrated information system is required. Connect data from various agencies for analysis. Implement and develop various service systems. The presence of tech-skilled personnel: OPP. Technology-skilled personnel are required. Able to use various technologies and develop various systems efficiently. Policies and measures to support the use of technology: There should be policies and measures to support the use of technology, such as budget allocation, training, and promotion of research and development.

3) *Financial factors. Having enough funding sources for smart city development necessitates a significant investment.* There is a need to find ways to raise funds to support these investments, such as the national budget, loans, private sector funding, and income from services. Efficient Money Management Mechanism: There needs to be an effective money management mechanism. Manage expenses, allocate resources, and monitor spending results.

4) *Legal and regulatory considerations*. Having laws and regulations that support smart city development: Governments should enact rules and regulations that support smart city development, such as laws on procurement, data use, and privacy protection. The presence of a monitoring and evaluation mechanism: There should be a mechanism to monitor and evaluate their performance of smart city projects to measure their success. Find bugs and improve them.

5) *Cultural and social elements.* Creating a culture that encourages change: People and communities should have a culture conducive to change. Be open to new technologies and ready

to learn. People should have the necessary education and skills: People should have the education and skills they need to live in smart cities, such as digital skills, critical thinking skills, and problem-solving skills.

Conclusion: Smart city development is a big challenge, but it is also a great opportunity to improve people's quality of life, develop the economy, and conserve the environment. The success of smart city development depends on a variety of factors. Management and administration, technology, finance, law and order, and cultural and social aspects. It is necessary to focus on these factors and develop a comprehensive smart city development plan. This leads to sustainable success.

Conclusion

Local governments' preparation for smart cities is critical to building sustainable and thriving societies and cities. Preparedness enables organizations to use resources and technology to manage their cities effectively. To respond to the needs and well-being of people in an era where technology plays an important role in the daily life and development of society and cities today and in the future. The state should formulate an area-based development strategy, set smart city standards in every aspect, support digital technology infrastructure and the internet, provide advice, facilitate knowledge transfer, and use technology management approaches. Local government bodies understand the people's context and needs. Define the advantages and strategies for smart city development. The state supports budget, technology, and personnel skills while decentralizing public services. 3) Develop intelligent leaders. Leaders have vision and understanding of the space context. Seek out new knowledge and experience, then apply it to determine how to rank. Importance: Listen to feedback. Learn from mistakes and analyze situations. Anticipate trends and make rational decisions. and 4) Create public participation and equality. To promote equal and equitable access to information technology, starting with raising awareness, co-thinking, planning, cooperating, joint monitoring and evaluation, benefiting, and taking responsibility, local governments must cooperate with all sectors to develop smart cities. The state must support and decentralize; localities must develop visionary leaders; and citizens must participate equally. Smart city development can be successful and sustainable when all sectors work together vigorously.

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