

## Smart City Master Plan for the Government of Serang Regency

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**ABSTRACT:** *This research develops the concept of a smart city in Serang Regency by studying and preparing an empirical structure in the realization of a smart city in Serang Regency. The data collection technique used is Library Research on secondary data. Literature study was conducted to obtain secondary legal material by conducting a review of books related to the object of preparation. Data analysis was carried out using the content analysis approach. The results of the Roadmap Smart Platform research are more focused on data integration and service integration in an area. This roadmap is adjusted to the main priorities and agenda related to application development and data integration in Serang Regency. Developed in line with data integration, increased authorization and information system security. In building infrastructure is to strengthen bandwidth. Bandwidth is the main capital to simplify and speed up business processes in the regions. Based on the research results, it can be concluded that the Smart Platform Roadmap is more focused on data integration and service integration in an area. This roadmap is adjusted to the main priorities and agenda related to application development and data integration in Serang Regency. Developed in line with data integration, increased authorization and information system security. In building infrastructure is to strengthen bandwidth. Bandwidth is the main capital to simplify and speed up business processes in the regions.*

**KEYWORDS:** smart city, roadmap, e government, smart village, budget allocation

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### INTRODUCTION

Sustainable development of the region is very important for the future of humanity. With issues such as technological development, climate change and population growth it is important to follow up, so that there are no negative impacts on the future of the region. To facilitate action around sustainable development, the United Nations has developed seventeen Sustainable Development Goals (SDGs). The Sustainable Development Goals have the ultimate goal of ending poverty, protecting the planet and ensuring that all human beings enjoy peace and prosperity.

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Sustainable development in a region must be harmonized with technological developments, this will make the region more intelligent, which is known as the "SMART" concept. This concept can not only be applied at the device level, but has been applied to various systems or arrangements in several regions. One of them is through the concept of Smart City or Smart City, (Difaryadi, 2022). Smart City itself is essentially a regional management concept based on Information and Communication Technology (ICT) so that the area becomes smarter and more efficient in utilizing various existing resources, and can improve services and quality of life for the community while still prioritizing environmental sustainability. . This research examines several matters related to the development of Smart City in the Government of Serang Regency, including by conducting a literature study on Smart City concepts and models, studies on Smart City implementation, as well as Smart City development policy plans. In addition, reviews of changing mindsets, patterns of action and community development are based on the information technology infrastructure roadmap, governance and human resources, services and smart services canvas, (Yusuf, 2023).

In the Smart City Master Plan for Serang Regency or the Master Plan for Smart Serang Regency, this is an action plan for the development of Serang Regency by adopting the concept of Smart City to be brought to the district level. Several initiatives related to public services will be identified to carry out various improvements in various sectors. In general, these initiatives will become strategies and guidelines in developing Serang Regency in dealing with various problems, especially the environment and climate change and technology in the next few years.

Sustainable development is very important for the future of humanity. With issues such as climate change and population growth as well as technological developments it is important that how to think so that these issues do not have a negative impact and make the future feasible from current developments. To facilitate action around sustainable development, the United Nations (UN) has developed seventeen Sustainable Development Goals known as the Sustainable Development Goals (SDGs). The Sustainable Development Goals cover solving various problems that ultimately aim to end poverty, protect the planet and ensure that all human beings can enjoy peace and prosperity.

The changing times which are accompanied by the increasingly sophisticated role of technology in terms of changing all aspects, and one of them is the governance of public services towards electronic-based government or e-government is not easy, because it is necessary to do a number of things such as the development of Information and Communication Technology infrastructure, electronic-based government work, the formation of cultural characteristics, and the development of the application of e-government itself. The development of e-government implementation can be through various models, including Government to Citizen (G2C), Government to Business (G2B), Government to Employee (G2E), and Government to Government (G2G).

This e-Government forces stakeholders to be able to develop governance by adopting Smart City, which will be used as an approach in solving governance problems through innovative

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ways to improve people's quality of life. One common denominator for people's quality of life is the drive for efficiency in the public sector, by seeking to provide better services through leveraging available resources. This situation encourages the government to focus on more 'smart' regional development. 'Smart' Regional Development is characterized by connectivity, integration and sustainability, so that the area can go beyond conventional solutions that are no longer able to support the dynamics of current technological developments, (Inayah, 2023).

These characteristics enable Smart Local Government to be the next step in the development of the use of technologies such as sensors, mobile technologies, and Big Data analytics. Internet of Things (IoT) as a device connected to the internet enables machine-to-machine communication, which can help governance effectively and efficiently. Development planning based on technological developments is an activity process in determining appropriate future actions in the form of integrated sectoral and zoning development strategies and policies taking into account available resources and the balance between economic growth, poverty reduction and environmental sustainability. Smart City is another way that can help to achieve local government development programs towards e-government.

Some of the important dimensions of a Smart City are governance that can provide services with the application of the latest Information and Communication Technology supported by modern infrastructure, then provide effective and efficient services to the whole community. Smart City is building an area with optimal use of human resources, then social capital, wise resource management and modern telecommunications infrastructure in order to realize excellent service or excellent service. The Smart City concept supports the implementation of e-government, namely the performance of the government by using electronic means in encouraging efficient, effective and transparent public service processes through the dissemination of information to the general public, as well as to other institutions in carrying out government administration.

In order to support the Smart City concept, the Government of Serang Regency has made several efforts such as having WIFI installed in all Regional Apparatus Organizations, optimizing general applications, and developing special applications based on the Master Plan for Service Map and Electronic-Based Governance System Architecture. The existence of a Smart City Masterplan document or a smart Serang Regency Master Plan is very important, this is the basis for implementing the e-government implementation process in the Serang Regency Government.

Smart City is a concept of planning, structuring and managing a city that is related to all aspects of life to support smart, educated, moral people and improve the quality of life of its citizens. In general, a Smart City is an area that can manage its various resources effectively and efficiently in solving various challenges by using innovative, integrated and sustainable solutions supported by the availability of infrastructure in providing excellent government services.

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Smart City is a concept that is quite monumental, in recent years the emergence of this concept has become increasingly popular throughout the world. This concept continues to be developed, both in the form of projects, study studies and the implementation of the concept as an integrated application. Meijer & Bolivar (2013), making a city smarter is an obligation and cannot be denied. Several countries are developing Smart Cities in accordance with their abilities and desires in developing their regions, researchers from both the educational and commercial circles are competing to continue to develop and improve this concept. As a result, the Smart City concept can be broadly defined, and it can be said that there is no definition that is truly precise or absolutely represents the Smart City concept.

Smart City can be realized with the support of wireless and optical fiber networks, in facilitating accessibility to several desired parameter points to be measured, in order to obtain the necessary data and information in real time. For example, the public can monitor pollution concentrations on certain roads, or use them as automatic alarms when certain radiation levels are present. It can also be used in optimizing irrigation functions and public street lighting. Water leaks are easier to detect, information on almost full bins, traffic conditions can be monitored by dynamically controlling traffic lights. This Information Technology can also be used to provide information on which parking lots are still empty, so as to save time and fuel.

In detail, it is stated that Smart City is an issue of problem solving and city services through the maximum utilization of Information and Communication Technology (ICT) services according to Manville. Meanwhile, according to Renata Dameri, it is stated that a Smart City is a geographical area, where Information and Communication Technology, logistics, energy production, city management and so on synergize with each other in providing benefits for the community.



Figure 1. Terminology of Smart City

Smart City is a dream of all big cities around the world. The Smart City concept itself can actually be defined broadly, it can even be said that there is no exact or absolute definition. As a parameter, there are different points of view on the definition of a Smart City.

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Carugliu in 2019 in his research said that a city can be said to be smart, when it has been able to maximize investment in human resources, transportation and information technology infrastructure to increase economic growth and increase the level of comfort of life and the environment through good governance. While Abdoulevv wrote in 2018, Smart City is a city that combines digital, natural and social concepts, so that economic development, good city infrastructure, friendly environment, transportation and comfortable living are formed and Strygopolous in 2017 stated that smart city development is carried out by developing the economy of city infrastructure, quality of life and good city governance.

From various perspectives that arise, each region or city will implement it according to the problems, development plans or financial capabilities of the city. Along with the development of Smart City, more and more vendors, researchers and academics are developing Smart City. Several vendors that have developed Smart City include IBM, Alcatel, Siemens, Cisco and so on.



**Figure 2. Framework of Smart City**

## METHOD

This smart city master plan research uses two different approaches in comprehensively examining aspects of regulatory legitimacy, namely normative legal research and empirical studies. Normative legal research is mainly used to examine aspects of philosophical and juridical legitimacy through two stages. First, carry out an inventory of various laws and regulations that have relevance to regional regulations regarding peace and public order, (Manan, 2019). Second, the statutory regulations that have been inventoried will then be analyzed by relying on two aspects, namely the philosophical aspect and the juridical aspect. An analysis of the philosophical aspects is carried out on the content of laws and regulations, (Supranto, 2018). The study of the juridical aspect is carried out on the norms of laws and regulations that provide the basis for regional authority as well as those that determine the regulatory substance that must be accommodated in the preparation of a Regional Regulation concerning the Implementation of an Electronic-Based Government System. While empirical

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studies are used to describe aspects of sociological legitimacy. The empirical studies are carried out through team studies and Focus Group Discussions on studies related to the vision and mission; goals and objectives of the Implementation of an Electronic-Based Government System in Serang Regency.

The data collection technique used is Library Research on secondary data. A literature study was conducted to obtain secondary legal material by conducting a review of books related to the object of preparation (Narbuko et. al., 2017). Primary data was obtained through field studies (field research), namely by conducting interviews and Focus Group Discussions (FGD). An interview is a conversation with a specific purpose carried out by two parties, namely the interviewer (interviewer) who asks questions and the interviewee (interviewee) who provides answers to the questions. while FGDs are also commonly referred to as qualitative data collection methods and techniques by conducting group interviews, (Maleong, 2017). FGD can be defined as a method and technique in collecting qualitative data in which a group of people discuss a focus on a particular problem or topic guided by a facilitator or moderator.

Data analysis used is qualitative analysis. Qualitative analysis is a way of analyzing data sourced from law based on concepts, theories, laws and regulations, doctrines, legal principles, expert opinions or the views of the researchers themselves. The data source in the smart city master plan research in Serang Regency consists of three legal materials, namely primary materials, secondary legal materials, and tertiary legal materials, (Soekamto, 2018).

## **FINDINGS AND DISCUSSION**

In realizing a more advanced Indonesia in the future, villages must have expertise in utilizing technology, especially information and communication technology. The Smart Village concept changes villages in Indonesia to be better prepared to face the future. Information and Communication Technology facilities and infrastructure are the main factors that must be prepared, in addition to the quality of human resources.

Smart Village is village development based on the application of technology. With the application of this technology, it is hoped that a village will be able to make various breakthrough achievements, so that it can qualify for the Independent Village category. The village has an important role in national development towards a more advanced Indonesia. This is not only because most of Indonesia's population lives in villages, but villages can also make a major contribution in terms of creating national stability. Village development is an integral part of a series of national development. The government through various ministries has made efforts in various forms and programs to accelerate the development of rural areas, but the results are still not significant, especially in improving the quality of life and welfare of rural communities. According to the Central Statistics Agency (BPS), the majority of poor people in Indonesia live in rural areas. Low social welfare is also found in rural areas. This is due to, among other things, the unequal distribution of economic resources between villages and cities.

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Villages in Indonesia have their own unique characteristics and different problems. Economic issues are still an obstacle to achieving Smart Village. According to the Ministry of Villages, Development of Disadvantaged Regions and Transmigration, although economic development, especially the production sector, has been intervened through the development of Science and Technology (IPTEK), institutionally, rural reforms are still experiencing problems in farmer groups such as Village Unit Cooperatives (KUD) or Business Entities. Village Owned (BUMDes).

In an effort to overcome these problems, village development must be carried out on a Smart Village basis, with the aim that solving various problems in rural areas can be carried out faster than the growth of the problem itself. Smart Village-based village development or Smart Village is the engineering of an ecosystem that allows the government, industry, academia and elements of society to be involved in making villages better. In the smart village concept, the management of all resources in a village can be measured by looking at the performance of managing these resources, so that they become more effective, efficient and sustainable through the involvement of various elements of society. The Smart Village concept is needed so that these villages are able to know the problems that exist within them (sensing), by understanding the conditions of these problems (understanding), and can regulate (controlling) through various existing resources to be used effectively and efficiently with the ultimate goal is to maximize service to its citizens.

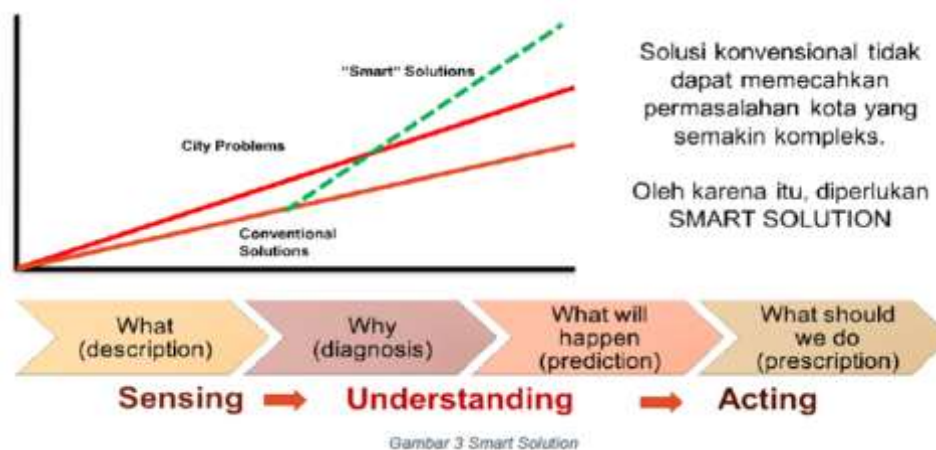


Figure 3. Proposed Smart Solution

With the enactment of Law Number 6 of 2014 concerning Villages, it is a very big opportunity for every existing village to be able to develop all of its potential resources independently according to their individual needs. This is done in order to realize the welfare of society. Village potential is the power, strength, ability and ability possessed by a village which has the possibility to be developed in order to improve the welfare of the community.

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To realize national development, the Indonesian nation began to build from the periphery, by strengthening regions and villages within the framework of the Unitary State of the Republic of Indonesia through the Ministry of Villages, Development of Disadvantaged Regions and Transmigration, has implemented several strategies in building villages within an optimization framework.

From a literature study on the Smart Village approach in the world and also by looking at the indicators used to calculate a sustainable society, it appears that each approach has its own strengths. As seen in the use of the Smart Village terminology, India and Kenya have different definitions. India developed the Smart Village concept through ecosystems, while Kenya, especially Ikisaya village, developed the Smart Village concept with a focus on the main problem in their area, namely electricity. Both have a wedge in activities where community education or value reform is part of the Smart Village ecosystem while in Kenya, this education is necessary to support the sustainability of renewable energy in the area. The gap between the two countries which adopt different approaches, this implies that the ecosystem approach can work in harmony with the sectoral approach, (Chaidir, 2022).

The Smart Village model consists of a. Smart Economy; b. Intelligent Social; c. Smart Environment; d. Information and Communication Technology and Infrastructure; e. Governance and Governance (Governance); and f. Human Resources (People).



Figure 4. Smart Village

To build a Smart Village concept with good infrastructure, both Information and Communication Technology, roads and other infrastructure must continue to be built to prepare services. With good infrastructure support, services can be developed as much as possible. Services and infrastructure will be selected bottom up from the village according to the results of the analysis and the needs of each. Good infrastructure and good services must be supported by good human conditions as well, so that there is no imbalance between technology and people as users. Therefore, assistance for increasing resources in rural/rural areas must continue to be carried out from an early age. So as to be able to bridge between technology and services provided by the village.



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To realize Smart Village, there are four (4) major components that are (ideally) integrated. The four components are: Lifestyle, life and community; Politics, administration, information systems, and technology; Institutions, businesses, regional economies and growth plans; and Agriculture-plantations, fisheries, industry, and local knowledge.

The collaboration of these four components is a definite need that needs to be provided by the stakeholders of the Smart Village, (Pahamzah, 2021). Based on the description above, various proposals for the need for the use of Information and Communication Technology-based services have been prepared. The role of Information and Communication Technology in the development of Smart Village is as an enabler/supporter of Smart Village services. To increase the "value" of Smart Village services, it is necessary to develop technology that enables 'smart' service standards that have been defined and also supports indicators that will be achieved in developing villages, (Pahamzah, 2020).

The success of implementing a Smart Village is highly dependent on "people", or the involvement of villagers in the creation and realization of the Smart Village vision. The Smart Village program will work if there is a good balance between the bottom-up process in which this process involves villagers and adapts them to the required technology. Residents are not only users or connoisseurs of the Smart Village program but also actors who are involved. Citizens can support views of participatory governance. However, participation from citizens will be meaningful if residents have certain capacities and skills. Until the definition of smart people emerged, namely villagers who have the capacity and capability to absorb and utilize appropriate technology to improve the quality of life in the village.



**Figure 5. Village Budget Allocation Pories**

**CONCLUSION**

The Smart Platform roadmap is more focused on data integration and service integration in an area. This roadmap is adjusted to the main priorities and agenda related to application development and data integration in Serang Regency. Implementation of the Smart Platform and Operation Room is an essential activity for a region to realize Smart Regency. The Smart

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Platform has a function to integrate various existing services in Serang Regency. While the Operation Room has a function as a visualization feature and to carry out analytical processes from data and services that exist in an area. The concept of Open Data means opening data that is general in nature and does not interfere with the implementation of government (eg weather, transportation, environment) to the public, thereby encouraging community participation in improving the quality of life in districts in accordance with the Law on Public Information Disclosure. Developed in line with data integration, increased authorization and information system security. In building infrastructure is to strengthen bandwidth. Bandwidth is the main capital to simplify and speed up business processes in the regions. This is a classic problem, where the lack of bandwidth is often the reason for work delays. Efforts are made to achieve broad network coverage so that services can be accessed equally by all regions. After good bandwidth and coverage, migration must be carried out from traditional infrastructure to cloud infrastructure (centralized data center) so that infrastructure management becomes more effective and efficient and is able to provide good service to all services.

**REFERENCES**

- Bagir Manan, 2019, *Pertumbuhan dan Perkembangan Konstitusi Suatu Negara*, Mandar Maju, Bandung.
- Chaidir, John. (2022). Management of Village Funds for Development in Serang District (Case Study in Teluk Terate Village). *PINISI Discretion Review*. 5. 417. 10.26858/pdr.v5i2.32997.
- Choloid Nabuko dan Abu Achmadi, 20017, *Metodologi Penelitian*, Bumi Aksara, Jakarta.
- Inayah, Nurul. (2023). Implementation of E-Government in Regional Asset Management at The Regional Financial and Asset Management Agency in Serang City. *International Journal of Social Sciences Review*. 4. 23-36. 10.57266/ijssr.v4i1.132.
- J. Supranto, 2018, *Metode Penelitian Hukum dan Statistik*, Rineka Cipta, Jakarta.
- Juniardi, Y., Herlina, L., Lubis, A. H., Irmawanty, & Pahamzah, J. (2020). Computer- vs. Mobile-Assisted Learning to Promote EFL Students' Speaking Skills: A Preliminary Classroom-Based Research. *International Journal of Instruction*, 13(3), 417-432. <https://doi.org/10.29333/iji.2020.13329a>
- Lexy Maleong, 2017, *Metodologi Penelitian Kualitatif*, Remaja Rosdakarya Offset, Bandung.
- Mochtar Kusumaatmadja, 2018, *Hukum, Masyarakat dan Pembinaan Hukum Nasional*, Binacipta, Bandung.
- Ni'matul Huda, 2017, *Negara Hukum, Demokrasi & Judicial Review*, UII Press, Yogyakarta.
- Pahamzah, John. (2021). MANAGING AND SUSTAINING HUMAN COMPETENCY IN PANDEMIC COVID 19 THROUGH SOVEREIGNTY OF REPUBLIC OF INDONESIA IN THE ERA OF 4.0. *International Journal of Business and Management*.
- Pangestu, Difaryadi & Anggraini, Wike. (2022). STRATEGI PEMERINTAH DAERAH DALAM MENGEMBANGKAN KOTA CERDAS (SMART CITY) MELALUI SMART GOVERNMENT DI KOTA SERANG. *PRAJA: Jurnal Ilmiah Pemerintahan*. 10. 130-141. 10.55678/prj. v10i2.660.

Publication of the European Centre for Research Training and Development-UK

Rojidi Ranggawijaya, 2018, Pengantar Ilmu Perundang-undangan Indonesia, Mandar Maju, Bandung.

Ronny Hanitijo Soemitro, 2020, Metodologi Penelitian Hukum dan Jurimetri, Ghalia Indonesia, Jakarta.

Soerjono Soekanto, 2018, Pengertian Penelitian Hukum, Universitas Indonesia, Jakarta.

Yakubu Yusuf, Yusuf & Kayode, Yusuf & Suleiman, Mohammed Ahmed & Muhammad, Alhassan & Musa, Magaga. (2023). SMART CITIES: THE CITIES OF THE FUTURE.