

Network Infrastructure Development in Serang District

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<https://doi.org/10.37745/ijmt.2013/vol101119>

Published June, 1 2, 2023

Citation: Chaidir J. and Haerofiatna H. (2023) Network Infrastructure Development in Serang District, *International Journal of Management Technology*, Vol.10, No 1, pp.11-19

ABSTRACT: *This study examines the development of network infrastructure in electronic-based government in Serang District by examining empirically the design of this infrastructure development. The data collection technique used is Library Research on secondary data. Literature study was conducted to obtain secondary data in examining in depth the object of study. Data analysis was carried out using the content analysis approach. The results of the study show that the Office of Communication, Informatics, Encryption and Statistics of Serang Regency must be ready to respond to any technological developments to strengthen the position of the Regional Government of Serang Regency. Based on the results of the study it can be concluded that the Information Technology Network Infrastructure Planning can be a direction, a guide in developing information technology in Serang Regency government agencies. This blueprint serves as a guide for unit/Regional Apparatus/Agency leaders in implementing and making the best use of information technology which will have an impact on increasing productivity and quality of service to the community.*

KEYWORDS: infrastructure, internet connection, development, clean governance

INTRODUCTION

The awareness and ability of the Indonesian people regarding the use of Information and Communication Technology in various aspects of life has grown and developed, although not evenly distributed. Currently, this condition raises higher demands on aspects of speed, convenience, accuracy, and transparency in various public services. The government needs to respond properly to this demand, of course through the effective use of Information and Communication Technology in the implementation of various government activities. In general, a government structure characterized by the use of Information and Communication Technology is called electronic government or e-Government. In 2008, the government issued two laws related to information management, namely Law no. 11/2008 concerning Information and Electronic Transactions (UU ITE) and Law no. 14/2008 concerning Public Information Disclosure (UU KIP). The presence of laws and regulations on electronic information and transactions as well as management of public information indicates that the level of dynamics

in the processing and utilization of information among the public, particularly electronic information, is quite high.

This condition must be anticipated with high readiness from the government's side, through various efforts to improve and regulate related to the use of Information and Communication Technology within the government itself. In the context above, the e-Government program is relevant. Since 2003, e-Government has become a program of the Indonesian government, in line with the issuance of Presidential Instruction number 3 of 2003 which regulates national policies and strategies for the development of e-Government. After the issuance of the regulation through the Presidential Instruction regarding e-Government, its realization in various government institutions, both at the central and regional levels, is still low. The main problem is the inability of government institutions to implement Information and Communication Technology in an appropriate and effective manner to support their duties and functions. Information and Communication Technology development programs in government institutions are often not in line with the goals and objectives of governance, do not have a clear focus, and are not sustainable. These problems arise due to the lack of good planning of Information and Communication Technology implementation programs.

Information and Communication Technology development planning becomes very important when the role of Information and Communication Technology is considered vital in governance. Information and Communication Technology is no longer seen as just a tool, but has turned into a strategic enabler for government programs, both internal and external. Information and Communication Technology must be able to encourage the achievement of the goals and objectives of government programs, build public services of prime quality, and improve the quality of communication and coordination regarding programs and resources within government agencies themselves. One of the requirements for the function as an enabler to be fulfilled is that the use of Information and Communication Technology must be aligned with the government environment.

Information and Communication Technology and bureaucratic systems and processes must go hand in hand and support each other. Conditions like this are clearly impossible to achieve without careful planning. Information and Communication Technology planning must also be carried out in a comprehensive manner, meaning that it does not only talk about Information and Communication Technology components such as computers, local networks and application software, but also other related matters such as Human Resources support, policies and standard procedures, as well as governance of the use of Information and Communication Technology itself. Planning also needs to be done within a fairly long time frame. This is to ensure the continuity and sustainability of the programs to be implemented.

The Serang Regency Government has now started an e-Government development initiative. The development of e-Government in Serang Regency practically has to start from the initial stage. Serang Regency does not yet have Information and Communication Technology infrastructure and application systems, as well as aspects of Human Resources and Information and Communication Technology institutions still need to be improved. Even though it may be

a bit behind from other regions that started earlier, starting from a really early condition also has the advantage, namely the freedom to determine direction, strategy, and technical choices. This advantage is what we want to take advantage of, namely by carrying out e-Government development in a top down, comprehensive and sustainable manner (Nurdiyani 2022).

In supporting the implementation of the Serang Regency government which will be centered in the central area of the Serang Regency government, it is necessary to have an Information and Communication Technology infrastructure planning document that will be built in the center of the Serang Regency government area. Building Information and Communication Technology infrastructure in the form of a network infrastructure development plan that will become the basis for the construction of fiber optic networks and wireless networks in the Serang Regency government with a command center as the central point of the telecommunication network, data center point, control center point and policies in a Serang Regency government , (Princess, 2022).

The purpose of network infrastructure planning in the Serang Regency government is to include planning for the construction of a fiber optic network through the underground which is the backbone network between Regional Apparatus Organization buildings located in the central area of the Serang Regency government and planning needs and building wireless networks in each building of the Regional Apparatus Organization. Region, (Rosalina, 2018).

Network infrastructure planning framework, ensuring the implementation of the construction and development of the national Electronic-Based Government System (SPBE) infrastructure which is carried out in a shared and efficient way, connected to the SPBE infrastructure of Central Agencies and Regional Governments, taking into account the factors of centralized computing and data centers; large capacity for compute and storage. use of virtualization technology; optimal utilization of information and communication technology assets (hardware/software); centralized control and operational collaboration; support regarding diverse network media; Central Agencies and Regional Governments as users; and infrastructure frameworks and government applications.

Network infrastructure is the foundation or framework that supports a system or organization. In computing, information technology infrastructure consists of physical and virtual resources that support the flow, storage, processing and analysis of data. Information technology network infrastructure may be centralized in a data center, or it may be decentralized and spread over several data centers controlled by Regional Government Organizations or by third parties, such as colocation facilities or cloud providers. Information Technology Network Infrastructure Components often include power, cooling and building elements needed to support data center hardware, (Mangkin, 2021).

Data center infrastructure also requires careful consideration of information technology security infrastructure. This can include physical security for buildings, such as electronic key entry, constant video and human surveillance of premises, carefully controlled access to servers and storage rooms, and so on. This ensures only authorized personnel can access the data center

hardware infrastructure and reduces the potential for malicious damage or data theft. Outside the data center is the internet infrastructure.

METHOD

This network infrastructure development research uses two different approaches in comprehensively examining aspects of regulatory legitimacy, namely normative legal research and empirical research. 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 on the Implementation of an Electronic-Based Government System. While empirical 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 network infrastructure in the implementation of governance in Serang District.

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. Sources of data in network infrastructure research in the implementation of government in Serang Regency, contain primary materials, secondary legal materials, and tertiary legal materials, (Soekamto, 2018).

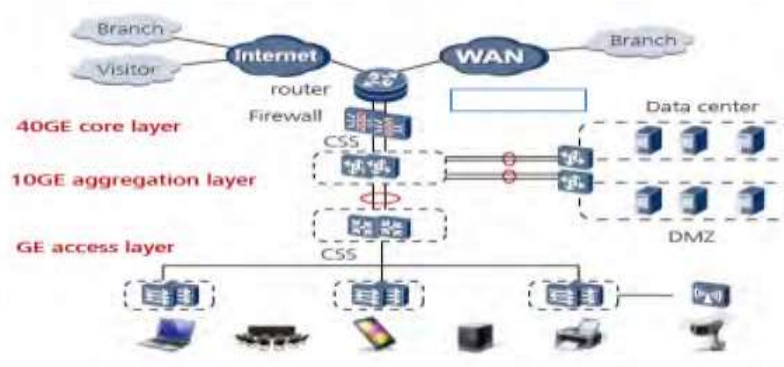
FINDINGS AND DISCUSSION

This network infrastructure planning document is a dynamic and flexible document, therefore this document must always be reviewed and harmonized so that it can keep abreast of the rapid developments in Information and Communication Technology and be able to adapt to the

changes that occur in each Serang Regency Regional Apparatus Organization. In supporting the implementation of an Electronic-Based Government System in Serang Regency which will be centered in the Serang Regency government area, an infrastructure planning document is needed that will be built in the center of the Serang Regency government area.

The development of the Serang Regency government is quite rapid so that it requires adequate information technology infrastructure support, as a result of several frequent user complaints. The results of the brief assessment obtained indications of the causes of the lack of reliability of this ICT infrastructure, including inadequate data communication network backbones (Fiber optics had not yet reached all important points plus less than ideal network topology), network devices of various types and classes, infrastructure management had not been integrated, and infrastructure management governance is not yet in place). The development of a reliable and safe Serang Regency ICT infrastructure will make a major contribution to the development of the city as a whole.

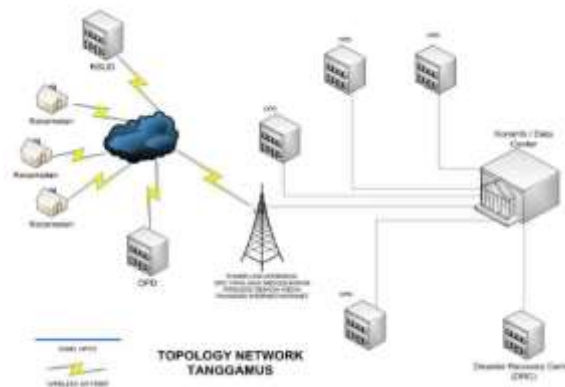
Figure 1. The Concept of ICT Development



In an effort to maximize the service needs of the Internet network in Serang Regency, the need for network infrastructure requires a safe, reliable and effective solution. The increasing number of Internet users will affect Internet speed, so it is necessary to increase bandwidth when Internet speed starts to slow down. The addition of bandwidth is later expected to improve the quality of communication between employees and the community, improve employee performance, and facilitate the flow of data exchange and public service information in the Serang Regency government.

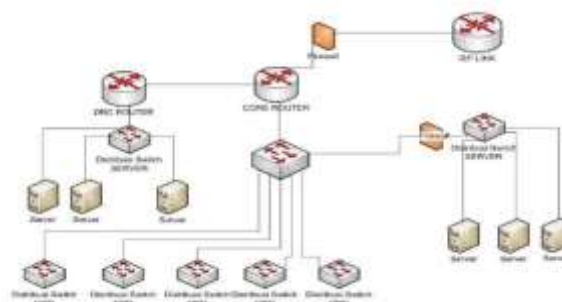
Based on the standard for internet access capacity and additional bandwidth will be carried out in stages according to conditions and needs at that time. Currently the amount of bandwidth available is only and it is projected that in the following year the Serang Regency government internet will use bandwidth subscriptions with additional IP transit by purchasing bandwidth.

Figure 2. The Expand of the Bandwidth



Splitting the internet network in Serang Regency needs to be done to reduce the risk due to network failure at a point that can cause the entire network on the part it goes through to die, then the main internet network needs to be broken down into several parts according to the topology of the building in each Regional Device and Serang District government units. Network splitting is also very helpful in terms of sharing internet bandwidth quota so that at any time when a section/work unit requires a strong increase in internet network performance, it will be easy to do this without having to cut off the network on other lines. Network strengthening is also needed as part of solving the internet network in an effort to respond to the development of information technology services for the process of improving excellent public services to the community.

Figure 3. Backbone Alternative Schema



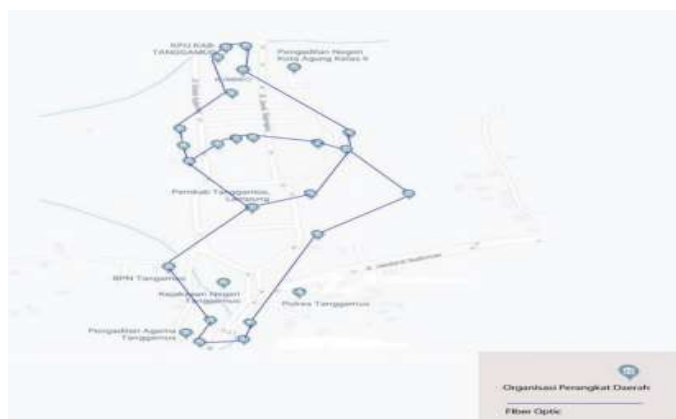
The expansion of hotspots in public service areas is carried out to provide convenience for employees and the people of Serang Regency to be able to access the internet within the hotspot range, by using PCs, laptops, note books or other devices with WiFi (Wireless Fidelity)

features, then the expansion of hotspots becomes a must. The distribution of hotspots must be reachable within the scope of public spaces where the public as clients can connect to the internet wirelessly (wireless or wirelessly) from PCs, laptops, note books or gadgets such as mobile phones within a radius range of the frequency or signal strength.

With a wide coverage of hotspot areas, all users, both employees and the general public, can connect to the internet, such as browsing, sending email, chatting, downloading the Disaster Recovery Plan (DRP). Information and Communication Technology (ICT) and ensure the continuity of information system services. A Disaster Recovery Plan is the stages of activities that will be carried out to protect the system (business processes) in the event of a disaster that can cause damage to the system, starting from prevention, preparedness, response to disasters to post-disaster recovery. Disasters that occur are not only caused by nature, but can also be caused by humans.

Disasters can happen at any time and we cannot predict when they will happen. The consequences will be greater for those who do not prepare themselves for the possibility of disaster. For this reason, a Disaster Recovery Plan (DRP) is absolutely necessary in the context of preventing and recovering all important assets, human resources (workers or employees), jobs, important data, and existing facilities.

Figure 4. Fiber Optic Internet Connection



The Network Infrastructure Planning Document at the Serang Regency Government Center was prepared as a reference in the development and implementation of an Electronic-Based Government System in the Serang Regency area for the next five years (2023-2028). In its preparation, a mapping of the initial conditions of the network infrastructure was carried out which described the implementation of an Electronic-Based Government System or e-Government in the Serang Regency government which was implemented in the Regional Apparatus Organization (OPD) of Serang Regency and collected various complaints and expectations which ultimately led to the ideal condition of a Government-Based System. Electronics that should be developed and implemented in Serang Regency for the next five years.

Network Infrastructure Planning at the Central Government of Serang Regency in the context of developing and implementing an Electronic-Based Governance System is aligned with the vision, mission, and policy direction of the Serang Regency government as stated in the Regional Medium Term Development Plan (RPJMD) of Serang Regency. The current use of Information Technology in the Serang Regency Government has not run optimally, both in terms of the government's internal needs and for the community. This is due to the lack of quality and quantity of available Information Technology infrastructure due to the unavailability of supporting documents for Information Technology infrastructure planning, particularly in terms of networks.

CONCLUSION

The Office of Communication, Informatics, Encryption and Statistics of Serang Regency must be ready to respond to any technological developments to strengthen the position of the Regional Government of Serang Regency to become an agency that is capable of managing quality information technology resources, so that it can be of benefit to local, national and even global communities, as well as participate play an active role in driving the wheels of the economy and nation-building, and produce works that are capable of driving the improvement of the nation's excellence. It is our great hope that with this Information Technology Network Infrastructure Planning it can be a direction, a guide in developing information technology in Serang Regency government agencies. With the information technology network infrastructure development plan, it will become part of the recommendations, both short term, medium term and long term. So that what Serang Regency aspires to be more advanced can be realized properly. In addition, it is hoped that this blueprint can help provide guidance for the leadership of units/regional apparatus/agencies in implementing and making the best use of information technology which will have an impact on increasing productivity and quality of service to the community.

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