

# The IT Master Plan Development of Randegan Village

Anita Wulansari<sup>1,\*</sup>, Tri Lathif Mardi Suryanto<sup>2</sup>, Narti Apriyanti<sup>3</sup>, Anindita Pratita<sup>4</sup>, Usmanur Dian Iswanti<sup>5</sup>, Lidya Bela Simarmata<sup>6</sup>, Ivana Elfirdaus<sup>7</sup>

<sup>1</sup> Information System Department, UPN "Veteran" Jawa Timur; anita.wulansari.sisfo@upnjatim.ac.id

<sup>2</sup> Information System Department, UPN "Veteran" Jawa Timur; trilathif.si@upnjatim.ac.id

<sup>3</sup> Information System Department, UPN "Veteran" Jawa Timur; nartiariyanti@gmail.com

<sup>4</sup> Information System Department, UPN "Veteran" Jawa Timur; aninditapratita1@gmail.com

<sup>5</sup> Information System Department, UPN "Veteran" Jawa Timur; usmanuriswanti44@gmail.com

<sup>6</sup> Information System Department, UPN "Veteran" Jawa Timur; simarmatalidyabela@gmail.com

<sup>7</sup> Information System Department, UPN "Veteran" Jawa Timur; ivanaelfirdaus@gmail.com

\* Correspondence: e-mail@e-mail.com; Tel.: (optional; include country code; if there are multiple corresponding authors, add author initials)

**Abstract:** This research focuses on the transformation of Randegan Village into a Smart Village through the integration of digital technology and community empowerment. The main objective of this research is the implementation of e-government in Randegan Village through the design of an IT Master Plan to achieve a smart village. The research design involved a comprehensive analysis of the Smart Village model and literature review by citing insights from the Smart City concept and successful implementation case studies from past research. To help achieve a smart village in Randegan Village, the research team aims to carry out sensing, understanding, controlling, in Randegan Village so that an IT master plan can be created which then has the potential to become a Smart Village Development Master Plan in Randegan Village. The result is that there is a need for cooperation between educational institutions and the community to increase technological literacy. Technology education programs are suggested to overcome challenges of technology adoption. Community involvement is considered very important in developing technology applications, to encourage their acceptance and benefits. The allocation of resources for technology infrastructure is considered important, and it is also important to work with government to ensure financial support and technical assistance. The results of this study are expected to help Randegan Village in determining policies and programs for developing village information systems so that later they can improve the quality of service to villagers, increasing economic growth, and quality of life in randegan village.

**Keywords:** E-Government; IT Master Plan; Smart Village

Vol. 3, No 2, Page 1-10.  
Received: 15 November  
Accepted: 17 November  
Published: date 20 November

## 1. Introduction

In recent years, the concept of rural development has evolved beyond traditional approaches, integrating technology and innovative strategies to enhance the quality of life for rural communities [1], [2]. The emergence of the smart village paradigm presents a promising avenue for transforming rural areas into digitally empowered and self-sustaining entities. Central to this transformation is the implementation of Information Technology (IT) master plans and e-Government initiatives, which have demonstrated their potential to bridge the rural-urban divide and foster holistic development [3], [4]. This paper delves into the case study of Randegan Village, illuminating the process and outcomes of optimizing rural development through the application of IT strategies and e-Government solutions within the context of the smart village framework. In Indonesia, research on smart villages has been increasingly undertaken by academics and governmental institutions. However, studies specifically focusing on smart rural areas remain relatively scarce [5].

Randegan is one of the villages located in the Tanggulangin sub-district, Sidoarjo Regency. The primary potential of this village lies in the fields of agriculture and plantations. In the implementation of information technology to support e-government and ICT governance in rural areas, a comprehensive and well-structured ICT strategic planning is needed. The Strategic ICT Planning in e-government development is used to align the strategic business needs of the village government organization with ICT strategies, thus deriving added value for the governmental organization [6]. The formulation of an ICT Master Plan for village government offices is expected to serve as a guide for city governments in determining policies, strategic plans, ICT work programs, the development of ICT management units, user management, network infrastructure development, ICT infrastructure, information system management guidelines, allowing village government offices to provide rapid and targeted public services and execute the government's vision in realizing good governance.

Based on previous research [7], this study aims to address rural development challenges by employing technology to enhance services, information access, and energy availability. This concept is rooted in local regulations and governance, with the objective of improving community livelihoods and economic conditions. For successful implementation, a robust regulatory framework is crucial, aligned with the Smart City plan in Banyuwangi. Meanwhile in a previous study [8], [9], collaboration between the Ministry of Communication and Information Technology and other ministries is highlighted to initiate a movement towards 100 smart cities. Banyumas Regency was chosen as one of the cities for the smart city project. This paper underscores the necessity of an application that can drive effective, efficient, and participatory smart city development.

## **2. Related Works**

Research related to the Smart Village Concept has been carried out by many previous studies. One such study entitled "Smart Village Concept and Tourism Development in Sumbawa Regency" provides a comprehensive overview of the concept of smart villages and its potential for tourism development in Sumbawa Regency, Indonesia. The paper highlights the need for comprehensive development in rural areas, particularly in terms of infrastructure and technology, to improve public services and address national problems such as poverty, health, clean water, and electricity. Overall, the paper provides valuable insights into the potential of smart village development for promoting

tourism and sustainable development in rural areas. It offers practical recommendations for the development of smart villages in Sumbawa Regency, emphasizing the importance of infrastructure, technology, community empowerment, and stakeholder collaboration [10].

Through the results of research conducted by Widdy Yuspita Wdiyningrum in the journal article entitled "Strategi Dinas Komunikasi dan Informasi (Diskominfo) dalam Pengembangan dan Pembangunan Master Plan Smart City di Kabupaten Bandung". This article discusses the strategy of the Communication and Information Office (Diskominfo) in the development and construction of the Smart City Master Plan in Bandung Regency. The concept of a smart city is defined as a city that uses technology to improve efficiency, public services, and the well-being of its residents. The article also mentions the use of the SWOT analysis (Strengths, Weaknesses, Opportunities, Threats) in formulating the strategy. The research method used is qualitative research, involving interviews, observations, and document analysis. The article emphasizes the importance of economic, social, and environmental factors in creating a smart city. [11]

In the previous new concept, village development with the smart village concept was first introduced by Indian researchers, N. Viswandham and Townya Vendula. They developed this concept in 2010, elucidating the village ecosystem and mapping integrated design methods for constructing a smart village [7]. The smart village concept can be used as a basis for rural development in Indonesia, although this concept cannot be fully applied due to the presence of varying ecosystems in each village [12]. However, village development should not only focus on the utilization of information technology but also comprehensively encompass services, governance, and community life [13]. The objective of this research is the implementation of e-government in Randengan Village through the design of an IT Master Plan to achieve a smart village. Also, this research to explore the potential of the Smart Village concept in improving public services, increasing economic growth, and quality of life in Randengan village.

### **3. Experiment and Analysis**

#### *3.1. Methodology*

In preparing a master plan that involves the transformation from a manual system to a computerized system, a systematic approach and methods related to the change process are needed. The research method used is a qualitative method to carry out an analysis of the existing IT systems or devices and the systems needed in Randengan Village. The qualitative method used is as follows. This method facilitates a deep and nuanced understanding of the existing IT systems and devices within Randengan Village, as well as the potential systems required for its advancement. The qualitative approach allows for a holistic exploration of the current challenges, strengths, and gaps in the technological landscape of the village. This, in turn, lays the foundation for the formulation of an effective master plan that aligns with the specific needs and circumstances of Randengan Village.

The stages of the research are carried out as follows [6], [14]:

1. Identifying problems with Randengan Village
2. Conduct a literature study on the village IT master plan and then carry out a field study to Randengan Village.
3. Conduct a study of the profile and strategy of the village of Randengan
4. Analysis of the need for an information system for the village of Randengan

5. Determine the information technology specifications of the Randegan village
6. Compile a management and project portfolio in the village of Randegan
7. Arrange information system governance
8. Create an IT master plan document that contains strategies and steps to implement and build an information system in the village of Randegan, including guidelines, indicators, frameworks, and cost plans.

#### *3.1.1. Literature Study*

Literature Study provides a theoretical framework by analyzing literature related to IT Masterplan and best practices in IT strategic plans. The process of conducting a Literature Study serves as a cornerstone in establishing a robust theoretical framework. This framework is constructed through the meticulous analysis of pertinent literature that delves into both the realm of IT Master Plan and the exemplar practices within the broader landscape of IT strategic planning. Literature study was conducted to compare the IT Masterplan which had previously been implemented to support the Smart City program with the IT Masterplan which will be prepared in Randegan Village according to the existing domains. The integration of these three stages will provide a comprehensive understanding regarding the implementation of the IT Masterplan which will be developed in Randegan Village and the potential for improvement and development in the future. This comprehensive review not only contributes to a theoretical underpinning but also serves as a reservoir of insights to guide and inform the forthcoming endeavours.

#### *3.1.2. Observation*

The exploration process extends beyond theoretical analysis, encompassing direct observations of the existing IT infrastructure within Randegan Village. Before the IT Master plan was prepared, it was explored first regarding the vision and mission of Randegan Village which would later be adapted to the needs of the village by implementing the existing master plan. The author is shown firsthand how IT infrastructure is used in various aspects of daily activities, including the use of hardware, software and data security both by Randegan village employees and residents in the environment. The practice of direct observation of the existing IT infrastructure in Randegan Village yields a multitude of invaluable benefits that transcend theoretical analysis. This immersive approach brings forth a deeper level of understanding and insight, enriching the process of preparing the IT Masterplan. By immersing themselves in this observational process, the author gleaned insights into the practical applications and utilization patterns of the existing IT infrastructure. This firsthand experience enriched their understanding of how technology threads through various operational facets, ranging from administrative tasks to communal engagements. Observing the utilization of hardware offered a tangible grasp of the tools that facilitate digital processes.

#### *3.1.3. Interview*

The interview stages involved the Randegan Village Secretary and the IT team in the village. Interviews were conducted to gain a deeper understanding of their views regarding the IT Master Plan, the costs incurred to adopt the technology, the obstacles encountered, and the solutions provided. In the discourse with the Randegan Village Secretary, invaluable insights were gleaned regarding the overarching vision and strategic alignment of the IT Master plan with the village's developmental goals. The Secretary's perspectives illuminated the intended impact of the plan on the village's overall efficiency, service delivery, and the enhancement of administrative functions.

Additionally, discussions around the financial implications of adopting new technology underscored the Secretary's informed stance on investment, resource allocation, and the anticipated long-term benefits for the community. The primary objective behind these conversations was to delve into a comprehensive understanding of various facets that intertwine with the IT Master plan.

### 3.2. Results and Discussion

In an effort to prepare an effective IT master plan for Randegan Village, it's important to grasp the concepts of Smart City and Smart Village as foundations. Smart City is the concept of applying digital technology to enhance services and quality of life in urban areas, while Smart Village extends a similar concept to rural areas, focusing on improving public services, economic growth, and technology utilization [15], [16].



**Figure 1** Six Pillars of Smart Village

There are 6 pillars in implementing a smart village, smart people, smart living, smart environment, smart economy, smart mobility, and smart government. Figure 1 shows the relevance of the 6 pillars smart village with *Rencana pembangunan Jangka Panjang dan Menengah Nasional* (RPJMN) 2020-2024 [17]. This refers to strengthening infrastructure and increasing Human Resources (HR). The purpose of having a smart village is as a form of transformation in the use of digital technology which is expected to encourage an increase in the quality of basic services and village development based on sustainable community empowerment. Digital technology has a role in realizing this smart village. Furthermore, to realize the development of a smart village, it is necessary to go through several stages, i.e., planning, implementing and monitoring.

Through the integration of digital technology, as seen in the Smart Village concept in Banyuwangi, Indonesia, the potential to enhance public services, stimulate rural economic growth, and support the tourism sector becomes more evident. Banyuwangi's approach to becoming a Smart Village is influenced by local policies, needs, and opportunities that shape such initiatives in a contextual manner. Utilizing diverse sources of income, including Village Original Revenue, General Allocation Fund, and Grants, provides a strong foundation for investing in smart technology.

To successfully transform into a Smart Village, it's important for Randegan Village to allocate a portion of its budget for the implementation and maintenance of Information Technology and Information Systems (IT/IS). This opens the pathway for the integration of technologies such as IoT devices and data analytics, resulting in the augmentation of public services and the quality of governance. Additionally, harnessing the inherent potential within the village's robust agriculture sector provides a unique opportunity to not only bolster this sector but also attract crucial investments that can catalyze the growth of intelligent and technology-driven agricultural practices. By infusing smart technology into agriculture, Randegan Village can optimize resource management, enhance crop yields, streamline distribution channels, and ensure sustainable farming practices. This not only elevates the economic prospects of the village but also contributes to the broader goal of fostering a technologically empowered and sustainable smart village ecosystem [18].

Parallel to the information from the IT master plan, Banyuwangi's evolution as a Smart Village aligns with key principles. The proposed Smart Village model, encompassing dimensions of Governance, Technology, Resources, Village Services, Life, and Tourism, can serve as a guideline for strategies tailored to Randegan Village's unique characteristics and challenges [7]. This model also reflects the necessity of considering technology-based solutions to address economic issues and enhance productivity and competitiveness in the industrial sector. This model exemplifies the vital importance of incorporating technology-driven solutions to effectively tackle economic challenges. Particularly, it underscores the significance of harnessing technology to elevate productivity and enhance competitiveness within the agriculture sector, which happens to be a dominant strength of Randegan Village. By integrating smart technology applications into agricultural practices, the village can optimize resource allocation, streamline supply chains, and implement precision farming techniques. These initiatives lead to increased crop yields, reduced waste, and improved overall efficiency. Such advancements not only bolster the economic prospects of the village's agriculture but also position Randegan Village as a beacon of innovation in the broader regional context. As a result, the transformation into a smart village becomes a strategic endeavor that not only empowers the local community but also drives sustainable rural development through technology-enabled solutions.

In effective IT master planning, lessons can be drawn from the need for regulatory frameworks, as Smart Village approaches are reliant on local policies. The interdisciplinary collaboration evident in the Banyuwangi Smart Village project can serve as a model for developing Banyumas as a smart city, emphasizing efficient workflow management and user-centered design. This experience underscores the importance of considering economic, social, and environmental factors in Smart Village creation. Thus, for Randegan Village, similar considerations need to be factored in when planning the journey towards becoming a Smart Village.

In the context of Randegan, allocating a portion of available financial resources to implement and maintain IT/IS infrastructure can be a fundamental initial step. Focusing on harnessing industrial sectors in line with Randegan's potential strengths, similar to Banyuwangi, provides opportunities for economic revitalization. Collaborations with governmental bodies, private entities, and other stakeholders will be crucial for accessing expertise and funding for smart village initiatives.

Moreover, the comprehensive Smart Village model approach presents an adaptable framework that can readily be implemented in Randegan. By tailoring strategies to the specific dimensions of

Governance, Technology, Resources, Village Services, Life, and Tourism, this approach ensures a holistic transformation that aligns with the village's distinct needs and opportunities. Drawing inspiration from the successful journey of Banyuwangi's Smart Village initiatives and guided by the principles outlined in the IT master plan, Randegan can chart its course towards becoming a thriving Smart Village, promoting sustainable development, enhancing public services, and improving overall quality of life for its residents.

Incorporating the model's Governance dimension entails establishing efficient decision-making processes, fostering local leadership, and engaging the community in shaping the village's technological evolution. Through strategic collaborations with local stakeholders, Randegan can ensure that its technology-driven endeavors are rooted in the needs and aspirations of its residents. By embracing the Technology aspect, the village can leverage digital tools, such as IoT devices, to modernize agricultural practices, optimize resource allocation, and enhance connectivity. This not only boosts productivity but also opens doors to innovative solutions that cater to the challenges faced by rural communities.

The Resources dimension involves effectively utilizing the village's existing assets, such as financial resources and human capital, to fuel its smart transformation. By investing in skill development and education, Randegan can cultivate a tech-savvy workforce capable of driving the implementation of digital solutions. Village Services encompass the digitalization of public services, facilitating seamless interactions between residents and local authorities. Through digital platforms, citizens can access essential services, fostering a more transparent and efficient administrative process.

The Life dimension emphasizes improving the overall quality of life for Randegan's inhabitants. By incorporating technology into healthcare, education, and social services, the village can enhance well-being and promote inclusivity. Lastly, Tourism holds potential for economic growth, where Randegan can promote its unique cultural and natural heritage through digital platforms, attracting visitors and generating revenue.

By adopting this multidimensional approach, Randegan can align itself with the principles of a Smart Village, capitalizing on its strengths in sectors like agriculture while embracing modern technology. The Smart Village model provides a roadmap for sustainable development, efficient governance, and enhanced living conditions, enabling Randegan to flourish as a shining example of technological progress in a rural context.

Meanwhile, the provided instruments such as services, applications, security, business processes, SPBE organizer, Network, hardware, software, and data and information reveal weaknesses in the application and SPBE organizer domains in Randegan Village. These weaknesses span across both the application domain and the SPBE organizer domain. The challenges are compounded by the scarcity of skilled human resources in IT management within the village. Moreover, the local residents' limited familiarity with technology further exacerbates the situation. The underutilization of the existing applications aggravates the issue, making it imperative to take strategic measures. With limited skilled human resources in IT management and the villagers' lack of understanding of technology, coupled with minimal implementation of existing applications, steps to enhance human resource capabilities, educate the community, and facilitate application adoption need to be central in the IT master plan for Randegan Village.

---

To address these challenges comprehensively, the forthcoming IT master plan for Randegan Village should primarily focus on augmenting the capabilities of the available human resources. This entails providing training and skill development opportunities to enhance IT management proficiency. Simultaneously, an essential aspect will be to initiate community-wide technology literacy programs. By enlightening the villagers about technology's benefits and operations, the barriers to adoption can be effectively lowered. A concerted effort to facilitate the integration of existing applications is also vital, necessitating a holistic approach that encompasses education, training, and ongoing support mechanisms.

In the endeavor to design an IT Master Plan for a Smart Village in Randegan, several strategic recommendations have been identified.

1. The first priority is Human Resource Enhancement, focusing on training and development in the IT field. Collaboration with educational and training institutions around the village is expected to enhance the population's ability to manage technology more effectively.
2. Technology Education program needs to be implemented for village residents to address confusion regarding new applications and technologies. This initiative can include training sessions, workshops, and informative sessions to improve the community's technological understanding.
3. Community Participation is also deemed essential in technology application development and usage. By encouraging active involvement, acceptance and understanding of technology can be improved.
4. The aspect of IT Infrastructure must not be overlooked. Therefore, it is recommended to allocate specific funds from the village budget to meet the needs of purchasing, operating, and maintaining the required IT hardware and software.
5. Strategic partnerships with the central government, private sector, and other relevant parties are also suggested recommendations. These partnerships are expected to provide access to resources, technical support, and funding that support technology development.
6. In application development, an emphasis on User-Friendly design with easy-to-use interfaces and clear guidelines should be highlighted. This is crucial to support village residents who are not accustomed to technology.
7. Lastly, Monitoring and Evaluation become crucial steps. It's recommended to establish performance indicators that measure the effectiveness of application and technology usage. Regular evaluation and improvement based on user feedback are considered necessary to ensure the success of technology implementation in Randegan Village.

#### **4. Conclusions**

Based on the results of the analysis and discussion above, the development of Randegan Village to become a Smart Village is an important and strategic step to improve the quality of life of the people, advance the economy of the Randegan village, and improve public services. The Smart Village concept, which combines digital technology with community empowerment, has great potential to realize these goals. Through discussions on the concepts of Smart Cities and Smart Villages, as well as implementation case studies in Banyuwangi, Indonesia, several recommendations and principles have been found that can be adopted by Randegan Village on its



way to transforming into a Smart Village. This research provides valuable insights into how digital technologies can be applied to improve public services and economic growth in rural areas.

Several factors such as human resource development, active community participation, and strong technological infrastructure are key elements in realizing the vision of a sustainable Smart Village. Then implement a comprehensive and directed IT Master Plan in realizing this vision. The IT Master Plan is the main guide in managing strategic steps in integrating digital technology, developing human resources, and building the infrastructure needed to create a sustainable Smart Village. By integrating these components holistically, Randegan Village has a real opportunity to undergo a positive transformation into a smart, innovative and sustainable entity in the digital era.

To achieve change towards a successful Smart Village, Randegan Village needs to take strategic steps. First, collaboration with educational and training institutions needs to be increased in order to improve human resource capabilities in managing technology. Second, a technology education program is needed that provides understanding to villagers regarding new applications and technologies. Third, involving the community actively in the development and use of technology will accelerate the acceptance and effectiveness of implementation. With these steps, as well as the allocation of funds and strategic cooperation, Randegan Village has the potential to become a successful example in realizing a smart and innovative future. As well as being able to assist Randegan Village in determining policies and programs for developing village information systems so that later they can improve the quality of service to villagers.

## References

- [1] J. Martins and L. G. Veiga, "Digital government as a business facilitator," *Inf. Econ. Policy*, vol. 60, p. 100990, 2022, doi: <https://doi.org/10.1016/j.infoecopol.2022.100990>.
- [2] N. Nurdin, "Institutional Arrangements in E-Government Implementation and Use: A Case Study From Indonesian Local Government," *Int. J. Electron. Gov. Res.*, vol. 14, no. 2, pp. 44–63, 2018, doi: <http://doi.org/10.4018/IJEGR.2018040104>.
- [3] C. Benevolo, R. Dameri, and B. D'Auria, "Smart Mobility in Smart City: Action Taxonomy, ICT Intensity and Public Benefits," vol. 11, 2016, pp. 13–28. doi: 10.1007/978-3-319-23784-8\_2.
- [4] M. de Jong, S. Joss, D. Schraven, C. Zhan, and M. Weijnen, "Sustainable-smart-resilient-low carbon-eco-knowledge cities; making sense of a multitude of concepts promoting sustainable urbanization," *J. Clean. Prod.*, vol. 109, pp. 25–38, 2015, doi: <https://doi.org/10.1016/j.jclepro.2015.02.004>.
- [5] R. N. Andari and S. Ella, "Pengembangan Model Smart Rural untuk Pembangunan Kawasan Perdesaan di Indonesia," *J. Borneo Adm.*, vol. 15, 2019.
- [6] W. Sardjono and R. M. Vijayanto, "Designing of IT Master Plan based on TOGAF ADM Framework in the Regional Water Utility Company," in *IOP Conf. Ser.: Earth Environ. Sci.*, 2021, p. 729 012016. doi: 10.1088/1755-1315/729/1/012016.
- [7] A. A. Aziiza and T. D. Susanto, "The Smart Village Model for Rural Area (Case Study: Banyuwangi Regency)," *IOP Conf. Ser. Mater. Sci. Eng.*, vol. 722, no. 1, p. 12011, 2020, doi: 10.1088/1757-899X/722/1/012011.
- [8] S. Chatterjee and A. K. Kar, "Effects of successful adoption of information technology enabled services in proposed smart cities of India," *J. Sci. Technol. Policy Manag.*, vol. 9, no. 2, pp. 189–209, Jan. 2018, doi: 10.1108/JSTPM-03-2017-0008.

- 
- [9] S. Rizaldi and A. K. Nugroho, "SISTEM MASTER PLAN SMART CITY KABUPATEN BANYUMAS," *J. Tek. Inform.*, vol. 1, no. 1 SE-Articles, pp. 45–51, Jul. 2020, doi: 10.20884/1.jutif.2020.1.1.7.
- [10] Ivon Arisanti, "SMART VILLAGE CONCEPT AND TOURISM DEVELOPMENT IN SUMBAWA REGENCY," *J. Ris. Kaji. Teknol. dan Lingkung.*, vol. 2, no. 1 SE-Articles, pp. 31–37, May 2019, doi: 10.58406/jrktl.v2i1.60.
- [11] W. Y. Widiyaningrum, "STRATEGI DINAS KOMUNIKASI DAN INFORMASI (DISKOMINFO) DALAM PENGEMBANGAN DAN PEMBANGUNAN MASTER PLAN SMART CITY DI KABUPATEN BANDUNG," *JISIPOL | J. Ilmu Sos. dan Ilmu Polit.*, vol. 7, no. 1 SE-Articles, Feb. 2023, [Online]. Available: <https://www.ejournal.unibba.ac.id/index.php/jisipol/article/view/1072>
- [12] L. Rizkinaswara, "Penerapan SPBE dan Rencana Pembangunan Pusat Data Nasional," 2020. <https://aptika.kominfo.go.id/2020/10/penerapan-spbe-dan-rencana-pembangunan-pusat-data-nasional/> (accessed Sep. 15, 2023).
- [13] Nur Hadian and T. D. Susanto, "Pengembangan Model Smart Village Indonesia: Systematic Literature Review," *J. Inf. Syst. Hosp. Technol.*, vol. 4, no. 2 SE-Articles, pp. 77–85, Dec. 2022, doi: 10.37823/insight.v4i2.234.
- [14] I. Prasetiawan, "IT Master Plan," *Ultim. InfoSys J. Ilmu Sist. Inf.*, vol. 10, no. 1 SE-Articles, Aug. 2019, doi: <https://doi.org/10.31937/si.v10i2.895>.
- [15] P. Gerli, J. Navio Marco, and J. Whalley, "What makes a smart village smart? A review of the literature," *Transform. Gov. People, Process Policy*, vol. 16, no. 3, pp. 292–304, Jan. 2022, doi: 10.1108/TG-07-2021-0126.
- [16] R. Sutriadi, "Defining smart city, smart region, smart village, and technopolis as an innovative concept in indonesia's urban and regional development themes to reach sustainability," *IOP Conf. Ser. Earth Environ. Sci.*, vol. 202, no. 1, p. 12047, 2018, doi: 10.1088/1755-1315/202/1/012047.
- [17] Kementerian Komunikasi dan Informatika, "Webinar ITU, Menteri Desa PDTT Ungkap Konsep Smart Village di Indonesia," 2020. <https://www.kominfo.go.id/content/detail/27412/webinar-itu-menteri-desa-pdtt-ungkap-konsep-smart-village-di-indonesia/0/berita#:~:text=Menteri Desa PDTT mengatakan%2C terdapat,smart economics%2C dan smart mobility.> (accessed Sep. 04, 2023).
- [18] Rini Rachmawati, "Pengembangan Smart Village untuk Penguatan Smart City dan Smart Regency," *J. Sist. Cerdas*, vol. 1, no. 2 SE-Articles, pp. 12–19, Dec. 2018, doi: 10.37396/jsc.v1i2.9.