

## Indonesia's Smart City: Does Legal Framework Matter?

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### ABSTRACT

This article delves into the pressing challenges encountered in the advancement of smart city initiatives in Indonesia, particularly emphasizing the critical necessity for comprehensive standard guidelines. Despite nationwide excitement surrounding smart city development, a lack of a unified regulatory framework has led to inconsistent urban planning strategies, devoid of a unified direction. The article's main goal is to emphasize the importance of establishing laws governing smart city development in Indonesia. Additionally, it aims to showcase innovative efforts undertaken by various groups to address this regulatory gap and promote inclusive smart city development. This study examines the challenges hindering Smart City development in Indonesia. By examining relevant academic literature and legal documents, the study analyzes the challenges stemming from the fragmented legal landscape. The analysis highlights how this lack of national coherence hinders national coherence, disrupts project implementation, and impedes program evaluation.. Overall, the article advocates for prioritizing a national legal framework that will foster a more stable environment, benefiting researchers, policymakers, and ultimately, the citizens who stand to gain from successful Smart City initiatives.

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### 1. Introduction

The 21st century witnesses a paradigm shift in human settlement, with cities becoming the dominant habitat. This trend of accelerated urbanization is projected to continue in Indonesia, with the World Bank estimating that a staggering 70% of the population will be residing in urban areas by 2045 [1]. Cities are more than mere aggregates of buildings; they are dynamic ecosystems shaped by political, economic, and social forces. Their very existence is driven by the fundamental human need to fulfill essential requirements. As a result, cities play a critical role in serving their resident communities. Urban centers

concentrate on a diverse range of activities, transforming them into hubs for governance, economic activity, and cultural exchange. This inherent dynamism fosters a unique environment, making cities increasingly attractive destinations for human habitation.

Indonesia's contemporary cities stem from the historical evolution of both traditional and colonial settlements [2]. These cities have sustained growth due to their economic magnetism, particularly through the establishment of industries and trade hubs. Furthermore, urbanization has been fueled by the social prestige associated with urban residency, leading to a rising tide of rural-to-

urban migration. This phenomenon is driven by the pursuit of improved living standards, often perceived as more readily attainable in cities due to the wider range of employment opportunities. The media also plays a significant role, promoting the allure of modern urban life and further enticing people to migrate.

Indonesia's rapid urbanization presents a significant challenge, as its economic growth fails to keep pace with population concentration. While the Asia-Pacific and East Asia regions demonstrate a 2.7% increase in GDP per capita for every 1% rise in urbanization, Indonesia experiences a meager 1.4% increase [1]. This disparity suggests an incomplete and uneven distribution of the economic benefits typically associated with urbanization. Consequently, urbanization in Indonesia appears to cause poverty rather than alleviate it [3][4].

Indonesia's smart city initiatives have their roots in Instruksi Presiden Nomor 3 Tahun 2003 [5] concerning National Policy and Strategy for E-Government Development, which laid the foundation for smart governance policies. This was further bolstered by Undang-Undang No. 23 Tahun 2014 [6] tentang Pemerintah Daerah (Regional Government Law), particularly Articles 386-390 on Regional Innovation, which highlighted the crucial role of innovation in national progress.

The implementation of smart cities gained further momentum with the issuance of Peraturan Presiden Republik Indonesia Nomor 2 Tahun 2015 [7] Tentang Rencana Pembangunan Jangka Menengah Nasional (RPJMN) Tahun 2015-2019. This regulation, under Book I of the National Development Agenda, outlined plans for city development, including the establishment of smart cities that are competitive, technology-based, and grounded in local culture. The culmination of these efforts was the Gerakan Menuju 100

Smart City (Movement Towards 100 Smart Cities) initiative initiated by the Ministry of Communication and Information in 2017.

However, despite these advancements, the absence of standardized guidelines and legislative frameworks remains a significant challenge. Unlike their counterparts in developed countries, Indonesian cities face unique socio-economic and infrastructural challenges, necessitating tailored approaches to smart city development. While cities in the global north benefit from established institutions and regulatory frameworks, cities in Indonesia contend with rapid urbanization, informal economies, and resource constraints. This dynamic context underscores the importance of context-specific guidelines and regulatory mechanisms to guide smart city initiatives and ensure their effectiveness and sustainability. Without a unified approach, each city develops its own plan, leading to a disconnected strategy for urban development.

This study attempts to respond to the following research questions: Considering Indonesia's current legal framework, is a dedicated legal basis necessary for the successful implementation of smart city initiatives? Is a legal framework essential for fostering the growth of smart cities in Indonesia?

## 2. Material and Methods

We utilized two main methodologies to investigate the development of smart cities in Indonesia. Initially, we conducted an extensive online search to understand the historical context of the Smart City initiative and how the legal foundation of the smart city initiative in Indonesia. Subsequently, we evaluated the country's progress by examining every document related and pertinent academic literature on smart city initiatives.

## 3. Results and Discussions

Historically, urbanization was driven by individuals seeking improved well-being. However, this trend has shifted as rapid and uncontrolled urban growth outpaced the development of essential urban services. Planning deficiencies, particularly the inability to anticipate growth across various sectors, have resulted in a critical imbalance between human living spaces and the environment. Current planning practices often favor consumption and investor profits, leading to substantial negative outcomes. For example, the expansion of shopping centers has overshadowed the development of green spaces. These issues contribute to common urban problems such as traffic congestion, pollution, inadequate clean water, drainage issues, waste management, flooding, and crime. This situation creates a complex web of economic, social, cultural, and environmental problems. The Smart City concept has emerged as a potential solution to address these multifaceted urban challenges.

A multitude of complex challenges plague modern cities, driving a relentless pursuit of innovative solutions. One promising approach is the Smart City concept, which leverages the power of digital intelligence to optimize urban management. This technology-driven approach fosters the development of integrated solutions by utilizing the internet as a powerful tool to comprehensively address urban issues. The Smart City concept emerged in 2008 with IBM's initial introduction (Smarter Planet), gaining significant momentum in the 2010s [8]. As cities grapple with ever-growing populations and complex challenges, Smart City initiatives hold immense potential to create more sustainable, efficient, and livable urban environments.

Indonesia's journey towards Smart Cities began in 2005 with Prof. Suhono Harso Supangkat pioneering efforts [9]. Through the e-Indonesia Initiatives Forum, he advocated for the adoption of Smart City principles by the national government. Prof. Suhono's vision

defines a Smart City as one that manages resources effectively to tackle urban challenges. He emphasized the use of innovative, integrated, and sustainable solutions for infrastructure development and service delivery, ultimately aiming to elevate the quality of life for residents. Interestingly, Prof. Suhono draws a parallel between the Smart City concept and the mandate for national education enshrined in the 1945 Constitution. He suggests that achieving "smartness" requires collaboration and coordinated action by all societal components, mirroring the collective effort required for national education.

While established cities like London, New York, and Singapore have embraced Smart City initiatives, it's important to note that the context must be recognized. These cities leverage technology to integrate existing, well-developed infrastructure, economic governance, and public services, focusing on management and accessibility. Indonesia presents a unique challenge. Each city has its own character and specific service needs. There are differences between smart cities in Indonesia and those in developed countries, particularly in terms of education level and city space, and emphasizes the importance of understanding and addressing urban problems through a broader perspective that includes people, processes, and technology [10]. Prof. Suhono Harso Supangkat emphasizes a more nuanced approach. He defines a Smart City as one that can identify its problems (sensing), analyze their nature (understanding), and effectively manage resources (controlling) to optimize service delivery for its citizens. In essence, the Smart City concept, as outlined by Supangkat [11], is an information technology-driven urban development model designed to achieve the common good through efficient and effective resource allocation. These differences highlight the importance of tailoring Smart City initiatives to the Indonesian context, rather than

simply replicating models from developed countries.

### 3.1. *The Legal Landscape of Smart Cities in Indonesia: A Patchwork of Policies*

Indonesia's journey into information technology began with Presidential Instruction No. 3 of 2003, laying the foundation for e-government initiatives. This policy also addressed data security and privacy concerns related to government information. While initial efforts focused on government websites, these primarily served as one-way communication channels for disseminating information.

The rapid growth of information technology spurred its wider application across various sectors. Recognizing the potential, the concept of Smart Cities was incorporated into the National Medium-Term Development Plan for 2015-2019. Building on this momentum, the National Development Planning Agency (Bappenas) formulated the National Urban Development Roadmap (2015-2045). This roadmap established targets for developing Smart Cities, aiming to achieve the vision of Sustainable and Competitive Cities for Indonesia [12].

Recognizing the potential of technology, Indonesia's Ministry of Communication and Information Technology (Kemenkominfo) joined forces with Bappenas, the Ministry of Home Affairs (Kemendagri), and the Ministry of Administrative and Bureaucratic Reform (KemenPAN) in 2017. Together, they launched the "Movement Towards 100 Smart Cities" initiative. This ambitious program, partnered with Kompas Gramedia and backed by experts, aimed to equip Indonesian cities and regencies with the tools they needed to thrive. The core objective was to guide them in developing Smart City Master Plans, ultimately accelerating the adoption of information technology to address urban challenges [13].

Envisioned as a three-year program (2017-2019), it set clear goals: creating 25 Smart City Master Plans in 2017, 50 in 2018, and culminating in 100 by 2019.

Indonesia's commitment to Smart Cities aligns perfectly with its broader goals for sustainable development. In 2017, the country formally adopted the Sustainable Development Goals (SDGs) through Presidential Regulation Number 59 of 2017 [[14]]. SDG Goal 11, focusing on Sustainable Cities and Communities, is particularly relevant. This goal finds strong parallels within the 2020-2024 National Medium-Term Development Plan (RPJMN) policies. These policies prioritize collaborative efforts with local governments, communities, and businesses to: (1) Strengthen the Foundations for Sustainable Living: This objective emphasizes creating robust financial and land-use systems that guarantee access to affordable housing and foster a supportive environment for residents, (2) Promote a Circular Economy: Implement effective waste management and reduction strategies, (3) Build Resilience for a Safer Future: Develop disaster-resilient infrastructure, strengthen essential infrastructure, and promote integrated management of disaster-prone areas alongside river basin restoration and conservation. The Smart City concept inherently supports these objectives, highlighting the potential of technology to create a more sustainable and resilient urban future for Indonesia.

A robust legal framework is crucial for establishing clear guidelines and standard operating procedures for Smart City development. However, Indonesia currently lacks a single, comprehensive law governing Smart City planning on a national level. The closest legal foundation comes from Law No. 23 of 2014 on Regional Government, which promotes regional innovation (Articles 386-390) [6]. This law encourages local authorities to develop innovative solutions for regional

challenges, without specifically mentioning technological advancements.

While Indonesia's Law on Regional Government (No. 23/2014) encourages regional innovation, it doesn't explicitly address technological advancements. This gap is partially filled by various Ministerial Regulations issued by the Ministry of Communication and Information Technology (Kemenkominfo). These regulations include: (1) Mapping Local Government IT Affairs (Ministerial Regulation No. 13/2016) [15], (2) Guidelines for Local Government IT Nomenclature (Ministerial Regulation No. 14/2016) [16], (3) One Data Indonesia for data integration and big data (Government Regulation No. 39/2019) [17], (4) Implementation of Concurrent Government Affairs in IT (Ministerial Regulation No. 8/2019) [18]. Prior to the enactment of Ministerial Regulation No. 8 of 2019, there was no explicit legal framework governing local government IT innovations related to Smart Cities. This regulation, however, empowers regional heads to establish Smart City committees (Article 60, Paragraph 3), fostering collaboration between local government, academia, community leaders, and businesses [18].

While Indonesia lacks a single, overarching law for Smart Cities, several regional policies are paving the way. Such as Jakarta Governor Regulation No. 280 of 2014 on the Establishment of the Jakarta Smart City Management Unit; Surabaya Mayor Regulation No. 61 of 2016 on the Position, Organizational Structure, Job Description, and Functions of the Surabaya City Communication and Information Technology Office; Bandung Mayor Regulation No. 1470 of 2018 on the Bandung Smart City Master Plan; Depok City Regulation No. 2 of 2019 on Smart City Implementation; and Bekasi City Regulation No. 02 of 2020 on Smart City Implementation by the Bekasi City Government. This patchwork of regional

regulations highlights the need for a comprehensive national legal framework for Smart City development in Indonesia. Such a framework could ensure consistency and coherence across different regions, fostering a more streamlined and effective approach to Smart City initiatives.

In 2017, as part of the Gerakan 100 Smart City initiative, the Ministry of Communication and Informatics (Kemkominfo) recognized the need for a standardized approach to Smart City planning. To address this, they developed a comprehensive guidebook titled *Buku Panduan Penyusunan Masterplan Smart City (Handbook for Developing Smart City Master Plans)*. This guidebook serves as a valuable resource for cities embarking on their Smart City journeys. It provides a structured framework for creating a comprehensive master plan that aligns with Indonesia's vision for Smart City development. The guidebook outlines key steps, including: (1) Situational Analysis: Assessing the current state of the city, identifying its strengths, weaknesses, opportunities, and threats, (2) Vision and Mission Formulation: Establishing a clear vision for the city's Smart City transformation and defining its mission to achieve that vision, (3) Strategic Goal Setting: Determining specific, measurable, achievable, relevant, and time-bound (SMART) goals that contribute to the overall vision and mission, (4) Action Plan Development: Devising detailed action plans for each strategic goal, outlining activities, timelines, responsible parties, and resource requirements, (5) Monitoring and Evaluation: Establishing a robust monitoring and evaluation framework to track progress, measure the impact of initiatives, and make adjustments as needed [19]. The book has played a pivotal role in empowering cities across Indonesia to develop well-structured and effective Smart City master plans. However, it's important to note that while the guidebook offers valuable guidance, it does not hold legal power. It serves as a recommended framework,

but cities are not legally obligated to follow its specific structure or recommendations.

The Ministry of Communication and Information Technology has also issued specific regulations on information technology use within Smart City initiatives. However, Law No. 12 of 2011 on Legislation doesn't explicitly address the ranking of Ministerial Regulations [20]. For reference, here's the legal hierarchy in Indonesia, as outlined in Law No. 12 of 2011:

- (1) The 1945 Constitution of the Republic of Indonesia (UUD 1945)
- (2) Decrees of the People's Consultative Assembly (TAP MPR)
- (3) Laws/Government Regulations in Lieu of Laws
- (4) Government Regulations
- (5) Presidential Regulations
- (6) Provincial Regulations
- (7) Regency/Municipal Regulations

The numbering system clarifies the importance of each regulation, with the Constitution holding the highest rank (1). Lower-numbered regulations should provide more specific details that support, not contradict, the broader principles established by higher-ranked ones. Ministerial Regulations fall outside this standard hierarchy. They hold legal weight if mandated by higher legislation or established by a relevant authority [20]. In the context of Smart Cities, regional regulations likely take precedence due to their focus on individual city needs. However, Ministerial Regulations can still offer valuable guidance and support.

Indonesian law recognizes Ministerial Regulations as a distinct type of legislation, existing alongside those listed in Article 7 [20]. These regulations are issued by a broad range of government bodies, including ministries, the supreme court, and local authorities like governors and mayors. However, unlike the regulations outlined in Article 7 (1945 Constitution, Laws etc.), Ministerial

Regulations don't have a pre-defined position in the legal hierarchy. For them to be legally binding (as explained in Article 8, paragraph 2), they must meet one of two criteria: (1) Mandated by Higher Legislation: The regulation is directly authorized by a higher law, (2) Established Based on Authority: The regulation is issued by a body with the legal authority to do so [20].

When it comes to overseeing smart cities, local administrations are guided by Ministerial Regulations pertaining to smart city initiatives. However, due to the absence of explicit mention of Ministerial Regulations in the legislative hierarchy outlined in Law No. 12 of 2011, their authority remains ambiguous compared to Regional Regulations. Nevertheless, some cases show that Regional Regulations draw upon Ministerial Regulations as a legal basis (e.g., Jakarta Governor Regulation No. 33 of 2020 on the Implementation of Large-Scale Social Restrictions based on Indonesian Ministry of Health Regulation No. 9 of 2020 on Guidelines for Large-Scale Social Restrictions). This suggests Ministerial Regulations might hold a higher position than Regional Regulations, as seen in Attachment II of Law No. 12 of 2011, item 41, which states that only regulations of equal or higher rank can serve as the legal basis for other regulations.

Additionally, the scope of Ministerial Regulations is national, given that ministers assist the president and are part of the central government. This means a Ministerial Regulation applies to all regions. In contrast, Regional Regulations are local and only bind their respective areas of authority. However, in practice, almost no Regional Regulations include Ministerial Regulations in their "considering" clauses as a legal basis because there is no clear legal norm governing the position of Ministerial Regulations. This includes Regional Regulations issued for smart city implementation.

Furthermore, Indonesia faces the broader issue of lacking a specific "City Act/Urban Law" or legislation focused on urban governance. While various regulations and policies touch upon aspects of urban management and development, there is no dedicated law addressing the unique challenges and complexities of city governance. To address this gap, the Indonesian government released Peraturan Pemerintah tentang Perkotaan Nomor 59 Tahun 2022 (Government Regulation on Urban Areas No. 59 of 2022) in December 2022. This regulation serves as a temporary measure while the draft Undang-Undang Perkotaan (City Act/Urban Law) undergoes review. This Government Regulation covers three key aspects: (1) Urban Service Standard: Establishes minimum standards for urban services to ensure quality and consistency across cities. (2) Smart City Approach: Promotes the adoption of smart city principles in urban management, leveraging technology to improve efficiency and citizen well-being, (3) Urban Funding Mechanisms: Outlines various funding sources for urban development projects, including central government grants, local government revenues, and public-private partnerships [21]. The enactment of Peraturan Pemerintah Nomor 59 Tahun 2022 demonstrates the government's commitment to fostering Smart City development in Indonesia. While it addresses some immediate needs, the finalization of the Undang-Undang Perkotaan remains crucial to establish a long-term and comprehensive legal framework for urban planning and Smart City initiatives.

Unlike many other countries that have specific urban planning legislation, Indonesia's decentralized governance system has resulted in fragmented approaches to urban development, with each city crafting its own master plan without standardized guidelines. Consequently, the absence of overarching urban legislation exacerbates the uncertainties surrounding the implementation and regulation

of smart city initiatives. This underscores the urgent need for Indonesia to establish comprehensive urban planning legislation to provide a clear legal framework for smart city development and ensure uniformity and coherence across regions.

### 3.2. *Bridging the Legal Gap: Scholarly Responses to Smart City Challenges in Indonesia*

The rapid growth of Smart City initiatives in Indonesia has spurred a surge of academic interest, evident in the proliferation of journal articles dedicated to this topic. Several scholars, including Johan et al. [22], Oktaria et al. [23], and Herdiyanti et al. [24], have identified the conspicuous lack of a comprehensive legal framework for Smart City development in Indonesia as a key factor driving the surge in academic interest on this topic. This vacuum in the legal landscape has motivated researchers to contribute their expertise by proposing guidelines and frameworks that can inform and guide government policies.

Recognizing these challenges, researchers have stepped in to bridge the gap by proposing frameworks and guidelines for Smart City development in Indonesia. These scholarly contributions offer valuable insights and recommendations to inform government policies and decision-making. By leveraging this expertise, policymakers can navigate the complexities of Smart City initiatives, ensuring their coherent, effective, and sustainable implementation.

Johan et al. [22] and Oktaria et al. [23] not only mapped existing Smart City services in Indonesia but also ventured into the realm of recommending services that could enhance the country's Smart City landscape. Johan et al. [22] drew upon their comprehensive literature review to identify exemplary Smart City services implemented in other countries and assess their potential applicability to the Indonesian context. This forward-thinking

approach highlights the importance of benchmarking against global best practices and identifying opportunities for innovation and improvement.

Building upon this foundation, Oktaria et al. [23] take a crucial step towards operationalization. They don't simply identify what services – they integrate the services identified in published articles with the existing legal foundation in Indonesia. This integration process is critical, as it demonstrates the importance of aligning Smart City development with the legal realities on the ground. By ensuring compatibility between proposed services and existing regulations, Oktaria et al. [23] provide a roadmap for achieving successful implementation. These combined efforts highlight the multifaceted nature of Smart City development, encompassing not only robust legal considerations but also the meticulous identification, analysis, and integration of relevant services. By addressing these aspects in tandem, researchers like Johan et al. [22] and Oktaria et al. [23] are enriching the understanding of Smart City implementation in Indonesia and paving the way for a more holistic and strategically sound approach to its development.

In addition to mapping services and legal considerations, Herdiyanti et al. [24] delve deeper into the crucial realm of evaluating Smart City performance. They propose a groundbreaking model for assessing Smart City performance, not simply relying on existing e-government performance measurements used in Indonesia. Instead, Herdiyanti et al. [24] draw upon a rich tapestry of resources, including various existing standards, previous scholarly works and articles, and the vital validation of three experts. This multifaceted approach ensures the model considers a diverse range of perspectives and best practices. Furthermore, their model goes beyond simply measuring performance; it encompasses six distinct dimensions of Smart City performance.

This comprehensive framework provides policymakers and stakeholders with a powerful tool to not only track progress but also gain a nuanced understanding of the effectiveness and impact of Smart City initiatives.

### 3.3. *From Fragmentation to Framework: Building a Legal Foundation for Smart Cities in Indonesia*

Indonesia's Smart City development faces a significant challenge: a fragmented legal landscape. While cities actively develop master plans, the position of Ministerial Regulations remains unclear compared to Regional Regulations. The recent Peraturan Pemerintah Nomor 59 Tahun 2022 offers some guidance, but the absence of a comprehensive Undang-Undang Perkotaan (City Act) creates uncertainty. This inconsistency adds to the challenges, making it difficult to ensure national coherence in Smart City initiatives. Additionally, it hinders researchers' ability to compare programs and potentially complicates project implementation due to potential legal conflicts or unclear funding mechanisms. As Boban and Weber [25] point out, a robust legal framework is crucial for governing and managing the complex technologies integrated into Smart City infrastructure, such as IoT devices, data analytics, and transportation systems. A more streamlined legal framework is crucial to facilitate smoother Smart City development across Indonesia.

The surge in Smart City initiatives has led to increased academic interest. Scholars like Johan et al. [22], Oktaria et al. [23], and Herdiyanti et al. [24] have highlighted the lack of a comprehensive legal framework for Smart Cities in Indonesia. Their research offers valuable insights and recommendations for government policies. Johan et al. [22] and Oktaria et al. [23] have mapped existing Smart City services and proposed enhancements based on global best practices, ensuring these align with Indonesia's legal context. Oktaria et al. [23] specifically integrate proposed services



with existing regulations, providing a practical roadmap for implementation. Herdiyanti et al. [24] propose a model for evaluating Smart City performance, drawing on various standards and expert validation. Their comprehensive framework encompasses six dimensions of Smart City performance, offering a nuanced tool for policymakers to assess and improve Smart City initiatives. Overall, these scholarly contributions provide a critical foundation for developing a cohesive and effective legal framework for Smart City development in Indonesia, addressing both immediate and long-term urban challenges.

To bridge the legal gap hindering Smart City progress, a two-pronged approach is recommended. First and foremost, prioritizing the finalization of the long-awaited Undang-Undang Perkotaan (City Act/Urban Law) is crucial. This comprehensive legislation would establish a clear legal framework for Smart City development, including the roles and responsibilities of national and local governments, funding mechanisms, and a well-defined hierarchy for regulations. Secondly, the government should consider either: Drafting specific legislation focused on Smart Cities: This dedicated law would provide detailed guidance on Smart City initiatives, fostering national coherence and streamlining project implementation or Revising Law No. 12 of 2011 to explicitly include Ministerial Regulations: By clarifying the ranking of Ministerial Regulations within the legal hierarchy, this revision would eliminate ambiguity and ensure their proper application in Smart City development. By prioritizing the Urban Law and pursuing one of the additional options, Indonesia can establish a robust and streamlined legal framework for Smart City development. This will pave the way for smoother project execution, improved national coherence, and ultimately, the success of Smart City initiatives across the nation.

#### 4. Conclusion

Indonesia's current patchwork of regulations and guidelines surrounding Smart City development presents a significant hurdle to their successful implementation. The ambiguity surrounding Ministerial Regulations compared to Regional Regulations creates confusion and inconsistency across different regions. The lack of a comprehensive "City Act" or dedicated urban governance legislation further hinders long-term planning and project execution. This fragmented legal landscape discourages potential investors and creates uncertainty regarding data privacy and project funding mechanisms.

A dedicated legal framework for Smart Cities in Indonesia would offer a much-needed solution. By establishing clear guidelines and responsibilities across different levels of government, it would foster collaboration and ensure consistency in Smart City initiatives. It would also provide a clear foundation for addressing critical issues like data privacy, intellectual property rights, and public-private partnerships. Additionally, a comprehensive legal framework would enhance transparency and accountability, attracting both domestic and international investment in Smart City projects. In conclusion, a unified legal framework is not merely beneficial but essential for fostering the successful growth of Smart Cities across Indonesia.

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