NAVIGATING DIGITAL GOVERNANCE: BRIDGING THE GAP IN DEVELOPING SANTER AS A SUPER-APP FOR SAMARINDA'S SMART CITY TRANSFORMATION

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ABSTRACT

Digital technologies have revolutionized governance, yet significant knowledge, practical, and population gaps persist in understanding their implementation in developing nations, particularly in local contexts like Samarinda, Indonesia. This study addresses these gaps by examining the development of the Satu Aplikasi Terintegrasi (SANTER) program as a super-app to support Samarinda's transformation into a smart city, aligning with Indonesia's digital governance agenda and the global discourse on nationalism in the digital era. Employing a qualitative descriptive approach, the research evaluates SANTER's readiness, identifies benefits and challenges across societal, business, environmental, and governmental dimensions, and proposes a strategic roadmap for its evolution into an inclusive super-app. Data were gathered through in-depth interviews with stakeholders, including city officials, SANTER administrators, and citizens, alongside observations and document analysis, and were analyzed using Miles and Huberman's interactive model. Findings reveal SANTER's potential to enhance efficiency, transparency, and citizen participation, yet its adoption remains low at 0.7% of Samarinda's population, hindered by digital literacy gaps, infrastructure limitations, and privacy concerns. These challenges highlight a knowledge gap in the practical implementation of super-apps, a practical-knowledge conflict gap between policy goals and societal adoption, and a population gap among digitally underserved communities. By proposing a roadmap for inclusive digital transformation, this study bridges these gaps, emphasizing the role of technology in strengthening local identity and national values. It offers actionable insights for policymakers navigating innovative city initiatives, ensuring digital governance transcends borders while fostering community resilience and equitable access in the digital era.

Keywords: Digital Governance; SANTER Super-App; Digital Literacy (alphabetically arranged and lowercase)

INTRODUCTION

The advent of digital technologies has fundamentally transformed governance worldwide, offering unprecedented opportunities to enhance public service delivery, transparency, and citizen participation (Aryatama et al., 2024; Jin, 2024). Governments are leveraging artificial intelligence, cloud computing, and mobile applications to improve efficiency and foster stronger government-citizen interactions (Sadykova & Galy, 2024). Key strategies for successful digital transformation include robust digital infrastructure, strong leadership, citizen engagement, and data-driven decision-making (Aryatama et al., 2024). E governance platforms, mobile applications, and data analytics have significantly improved service accessibility and responsiveness (Idrus et al., 2024). However, challenges such as cybersecurity threats, digital divide issues, and regulatory concerns persist (Jin, 2024; Idrus et al., 2024). Successful implementations, like South Korea's e-government initiatives, demonstrate the importance of comprehensive strategies and inter-departmental coordination (Sadykova & Galy, 2024). Ultimately, digital transformation in governance requires a tailored approach considering unique socio-economic and cultural contexts (Idrus et al., 2024).. In the context of developing nations, the concept of smart cities has emerged as a promising framework to integrate technology into urban management, aligning with global trends toward sustainable and inclusive development. Indonesia, as a nation striving to strengthen its digital infrastructure, has adopted this paradigm through initiatives such as Presidential Instruction No. 3 of 2003 on e-government, which emphasizes the use of information and communication technology (ICT) to enhance governance. Within this landscape, the city of Samarinda, the capital of East Kalimantan, has introduced the Satu Aplikasi Terintegrasi (SANTER) program—a super-app launched on January 21, 2022—aimed at consolidating public services across societal, business, environmental, and governmental dimensions to realize its vision as a smart city.

Despite these efforts, the practical implementation of digital governance tools, such as SANTER, faces significant challenges, particularly in developing regions. With a population of approximately 842,691 (2020), Samarinda faces digital literacy gaps— where 60.69% of residents do not utilize internet-based government services—and infrastructure limitations, resulting in a mere 0.7% adoption rate (approximately 5,000 users) of SANTER as of 2023. This discrepancy underscores critical research gaps identified in the literature: a knowledge gap due to the scarcity of studies on the practical deployment of super-apps in developing nations, a practical-knowledge conflict gap arising from the misalignment between policy ambitions and societal adoption, and a population gap reflecting the underrepresentation of digitally underserved communities in digital transformation research (Miles, 2017). Moreover, the connection between digital governance and local identity or nationalism—a pertinent theme in the globalized digital era—remains underexplored, adding another layer of inquiry. (Heang, R, 2024)

This study seeks to address these gaps by evaluating SANTER's readiness, assessing its benefits and challenges, and proposing a roadmap for its development into an inclusive super-app. Conducted within the framework of qualitative research, this investigation aims to bridge the divide between theoretical aspirations and practical realities, offering actionable insights for policymakers. By doing so, it contributes to the broader discourse on navigating digital governance challenges, ensuring that Samarinda's smart city transformation not only leverages technology but also reinforces local resilience and national values in an increasingly borderless digital world. The research question is: How can SANTER be developed to support Samarinda's smart city transformation by addressing knowledge-practical knowledge conflicts and population gaps, while fostering inclusive digital governance that strengthens local identity in the digital era?

METHODOLOGY

This study adopts a qualitative descriptive approach as the primary methodology to comprehensively examine the development, implementation, and contextual dynamics of the SANTER program within the broader framework of digital governance and smart city transformation in Samarinda. Data collection was conducted through a multi-method strategy, including in-depth interviews with a diverse range of stakeholders such as local government officials responsible for digital innovation, technical developers involved in the creation and maintenance of the SANTER platform, as well as everyday users from various demographic backgrounds, to capture a holistic understanding of user experience and

institutional intent. In addition, the research incorporated direct, systematic observation of SANTER-related activities, events, and application usage in real-life settings to identify behavioral patterns, system usability, and public interaction with the platform. Complementing these primary sources, the study also conducted

extensive document analysis, reviewing official government policies, internal reports produced by the SANTER management team, strategic planning documents, and relevant statistical data to contextualize the findings within administrative frameworks and socio-demographic realities. The analysis of all collected data was

carried out using Miles and Huberman's interactive model, which consists of three interrelated stages: data reduction to focus and simplify raw data, data display to organize information in a manner that facilitates interpretation, and conclusion drawing and verification to derive insights that are both theoretically grounded and practically relevant to the ongoing discourse on digital transformation and inclusive e-governance.

RESULTS AND DISCUSSION

Readiness and Features of SANTER

SANTER, envisioned as an all-encompassing digital platform for public service delivery, presently facilitates the integration of more than ninety distinct service menus that span a comprehensive array of governmental sectors, including but not limited to administrative affairs, civil registration, environmental management, public works, social services, and economic development. This expansive aggregation of services not only reflects the platform's architectural ambition to serve as a centralized access point for diverse public functions but also highlights its operational capacity to unify fragmented bureaucratic processes into a more cohesive and user-centric interface. The consolidation of such a broad spectrum of services into a single digital ecosystem underscores SANTER's strategic role in redefining public sector efficiency and simplifying citizen-government interaction in the context of Samarinda's smart city aspirations.

However, despite these significant strides in service unification, SANTER's operational maturity and system readiness remain notably constrained by a constellation of technical and structural challenges that inhibit its optimal functionality and broader public adoption. Among the most pressing of these constraints is the inadequacy of the platform's user interface (UI), which, in its current iteration, lacks the level of intuitiveness, responsiveness, and user friendliness required to meet the expectations of a digitally diverse and multi generational user base. This limitation creates barriers to seamless navigation and interaction, particularly among users with limited digital literacy, thereby undermining the inclusivity and accessibility of the platform. (Christover, D., Irawan, B., Akbar, P., Ibrahim, A. H., & Ananda, A., 2023)

In addition to UI challenges, the responsiveness of the system has emerged as a critical concern, with observable delays in user interaction feedback and data processing that may erode user trust and reduce the perceived reliability of the platform as a real-time service facilitator. (Kuppam, Manoj, 2024). These latency issues not only diminish user satisfaction but also compromise the platform's credibility as a digital governance tool designed to enhance administrative efficiency.

Compounding these issues is the platform's limited support for multilingual accessibility, which poses a significant equity challenge in a linguistically diverse urban population. (Mouboua, P. D., Atobatele, F. A., & Akintayo, O. T., 2024). The absence of adequate language options restricts the platform's reach. It marginalizes non-dominant language speakers, ultimately reinforcing existing digital divides and excluding segments of the population that could most benefit from public digital services.

Moreover, a critical limitation lies in SANTER's limited integration with external services,

especially those provided by private-sector actors such as utilities, fintech, transport, and health service providers. This underdeveloped interoperability significantly curtails the platform's capacity to function as a true super-app—one that not only aggregates government services but also connects users to a broader ecosystem of everyday needs and conveniences. The lack of strategic public-private

partnerships limits the innovation potential and restricts user engagement, preventing SANTER from evolving into a dynamic, multifunctional tool that reflects contemporary digital citizen expectations.

In light of these issues, it becomes imperative to undertake targeted enhancements in key areas: redesigning the user interface to prioritize accessibility and user experience, optimizing backend responsiveness to enable real-time interactions, implementing comprehensive multilingual support to ensure inclusivity, and

fostering robust integration with private sector platforms to expand service variety and utility. These strategic improvements are essential for enabling SANTER to transcend its current limitations and fulfill its envisioned role as a flagship super app in Samarinda's digital transformation journey.

Benefits Across Key Dimensions

The implementation and continuous development of a robust digital public service platform like SANTER stand to deliver profound and multifaceted benefits, positively impacting society, businesses, the environment, and governance. From a societal perspective, the platform has immense potential to significantly enhance service accessibility for all citizens. By consolidating various public services into a single, easily navigable digital interface, it breaks down geographical barriers and time constraints, making essential services available anytime, anywhere. This increased accessibility is coupled with improved convenience, as citizens can complete transactions, access information, and interact with government agencies without the need for physical visits or lengthy queues. Furthermore, the platform's digital nature fosters greater transparency in public administration. Digital trails of interactions and clear information dissemination can empower citizens with better oversight, fostering trust and accountability within governmental processes.

For the business sector, particularly local Micro, Small, and Medium Enterprises (MSMEs), the platform offers substantial opportunities to access digital services. This connection can manifest in various ways, such as simplified business registration processes, easier access to permits and licenses, and even new avenues for engagement with government procurement or support programs. By digitizing these interactions, the platform helps MSMEs reduce operational overheads, improve their efficiency, and

expand their market reach, thereby stimulating local economic growth and fostering a more dynamic business ecosystem. (Sutomo, D.A, 2025)

In terms of environmental impact, the shift to digital services carries a significant potential to reduce paper usage. By minimizing the need for physical documents, forms, and printed communications, the platform directly contributes to the conservation of natural resources and waste reduction. This digital transformation inherently supports broader environmental awareness by promoting sustainable practices within public administration and setting an example for citizens and businesses alike. It aligns with global efforts toward a greener, more sustainable future by leveraging technology to lessen the ecological footprint of administrative processes.

Finally, at the governmental level, the benefits are transformative, primarily through the facilitation of increased data-driven decision-making and enhanced administrative efficiency. A centralized digital platform generates vast amounts of data on service utilization, citizen needs, and operational bottlenecks. Analyzing this data provides invaluable insights that can inform policy formulation, resource allocation, and targeted interventions, leading to more effective and responsive governance. Simultaneously, automating and streamlining bureaucratic processes through the platform significantly boosts administrative efficiency, reducing processing times, minimizing errors, and freeing up human resources to focus on more complex and strategic tasks. This ultimately leads to a more agile, effective, and citizen centric public administration.

Significant Challenges Facing SANTER's Optimization and Adoption

Despite its foundational strengths and ambitious goals, the SANTER platform confronts several substantial challenges that impede its optimal functionality, widespread adoption, and ultimate success as a transformative digital public service hub. These hurdles span issues of human capability, technological access, public trust, and design efficacy.

A primary obstacle is the pervasive issue of digital literacy among a significant portion of the citizenry. Many potential users currently lack the fundamental digital skills and comfort levels required to navigate and utilize SANTER effectively. This gap in digital proficiency creates a significant barrier to entry, meaning that even with robust features, a substantial segment of the population may find the platform inaccessible or intimidating. Overcoming this challenge necessitates concerted efforts in digital education and outreach to empower citizens with the necessary skills to engage with the platform confidently.

Compounding the human-centric challenge is a critical limitation in infrastructure, specifically concerning internet coverage. In many peri-urban and rural areas, access to reliable and high-speed internet remains limited or absent (Vashistha, A., Anderson, R., & Mare, S.,2018). This digital divide geographically isolates communities, preventing them from connecting to SANTER and thus negating the platform's benefits for these populations. Addressing this infrastructure deficit is paramount to ensuring equitable access and truly universal service delivery across all regions.

Furthermore, SANTER grapples with pervasive privacy concerns among the public. There is a discernible weak public trust in data security and surveillance practices related to governmental digital platforms. Citizens are often apprehensive about sharing personal information online, fearing potential data breaches, misuse, or unwarranted monitoring. This lack of confidence can significantly deter adoption, regardless of the platform's convenience or efficiency. Rebuilding and fortifying public trust through transparent data handling policies, robust security measures, and clear communication is crucial for widespread acceptance. (Chouraik, C., 2024)

Lastly, a significant challenge lies directly within the platform's design, specifically its User Experience (UX) (Unger, R., & Chandler, C., 2023). The application's interface is frequently described as unintuitive and difficult to navigate. This poor UX can lead to user frustration, abandonment of tasks, and a reluctance to reuse the platform. An overly complex or confusing interface undermines the very purpose of a digital public service platform, which is to simplify and streamline interactions. A thorough redesign focusing on user-centric principles, clarity, and ease of use is essential to transform SANTER into a genuinely accessible and preferred channel for public services.

Addressing these interconnected challenges—digital literacy, infrastructure gaps, privacy concerns, and user experience—is critical for SANTER to unlock its full potential and truly serve as an inclusive and effective digital backbone for public service delivery in the region.

Critical Gaps Hindering SANTER's Full Potential

Beyond the immediate challenges, a deeper analysis of SANTER's current state reveals several fundamental gaps that could significantly impede its long-term success and broader impact. These gaps highlight areas where understanding, strategy, and reach are currently insufficient.

Firstly, a substantial knowledge gap exists, specifically concerning the development of super-apps within the unique context of Indonesian smart cities. There is limited comprehensive research available that thoroughly examines the intricacies, best practices, and specific challenges involved in building and scaling integrated digital

platforms like SANTER in this particular environment. This lack of localized, in depth research means that decision-making might not always be informed by the most relevant data or insights, potentially leading to suboptimal strategies or missed opportunities for innovation tailored to Indonesia's urban landscape.

Secondly, a significant practical knowledge conflict is evident, where the ambitious policy goals and aspirations for digital governance are not well-aligned with the actual digital readiness of citizens. While policymakers may envision a seamless digital transformation, the reality on the ground often shows a disparity in digital literacy, access to technology, and overall comfort with online interactions among the general populace. This misalignment creates a disconnect between policy intent and practical implementation, potentially leading to low adoption rates and an inability to realize the benefits of digital initiatives fully. For SANTER to truly thrive, its development and deployment strategies must be firmly grounded in an accurate assessment of the public's current digital capabilities and evolve in tandem with efforts to enhance digital literacy.

Finally, a critical population gap persists, leaving underserved communities disconnected from digital governance. Despite the efforts to centralize services, significant segments of the population, particularly those in remote, low-income, or less digitally-advanced areas, remain unable to access or effectively utilize platforms like SANTER. This exclusion not only perpetuates existing inequalities but also undermines the fundamental principle of inclusive governance. Bridging this gap requires targeted interventions, improved infrastructure in marginalized areas, and tailored approaches to ensure that the benefits of digital transformation reach every citizen, not just those who are already digitally proficient or well-connected.

Addressing these fundamental knowledge gaps, strategic alignment, and population reach is crucial for SANTER to evolve beyond its current state and genuinely fulfill its promise as an inclusive and impactful super-app for public service delivery in Indonesian smart cities.

Fostering Nationalism and Digital Identity through SANTER

Digital platforms such as SANTER hold significant potential to serve as dynamic instruments for reinforcing local values and strengthening national identity by thoughtfully embedding culturally relevant services, fostering meaningful civic engagement, and preserving regional languages and traditions through innovative digital formats. By integrating features thatreflect the unique sociocultural context of the communities they serve—such as localized content, region-specific public service offerings, and symbolic representations of local heritage—these platforms can go beyond their administrative function to become digital spaces where cultural pride and civic consciousness are actively cultivated and sustained. (Kitchin, R., 2016).

SANTER, in particular, can contribute to the preservation and revitalization of local identities by digitizing traditional practices, promoting indigenous knowledge systems, and supporting local artisans, community events, and language preservation initiatives within its ecosystem. This not only ensures the representation of diverse cultural narratives in the digital sphere but also fosters a deeper connection between citizens and their heritage, enabling a form of digital participation that is inclusive, affirming, and empowering.

Furthermore, by incorporating participatory tools such as feedback systems, digital public forums, community reporting, and citizen-led initiatives, SANTER can encourage residents to take an active role in local governance and decision-making processes, thereby nurturing a stronger sense of ownership, accountability, and collective responsibility. These mechanisms promote a model of civic engagement that is responsive to local needs while aligning with broader national ideals of unity, inclusivity, and democratic participation.

In this way, SANTER can function not only as a digital governance tool but also as a vital cultural medium that bridges the gap between modern technological adoption and the enduring values of national identity, social cohesion, and artistic preservation. Through its strategic design and inclusive functionality, the platform has the potential to embody a vision of digital nationalism that respects local diversity while promoting a shared commitment to the nation's progress in the digital age.

STRATEGIC ROADMAP FOR INCLUSIVE SUPER-APP DEVELOPMENT

The successful transformation of SANTER into a fully functional and inclusive super-app demands a phased, strategic, and multidimensional roadmap that holistically addresses infrastructural, social, cultural, and governance-related challenges. This roadmap is designed to ensure that the development of the platform is not only technologically sound but also socially inclusive, culturally relevant, and institutionally integrated, thereby aligning with Samarinda's broader smart city vision and Indonesia's digital governance goals. The roadmap consists of three interrelated phases, each representing a critical developmental milestone in the journey toward a resilient and people-centered digital public service ecosystem.

Phase 1: Strengthening Foundations (2025–2026)

The initial phase focuses on building a solid foundation by addressing fundamental infrastructural and accessibility barriers that currently limit the reach and effectiveness of the SANTER platform. Key actions in this phase include the expansion of internet access to underserved and marginalized areas, such as rural and peri-urban communities, to ensure equitable digital connectivity across all social strata.

Simultaneously, the user interface (UI) of the platform must undergo comprehensive redesign efforts to enhance its intuitiveness and accessibility through multilingual and voice-based support, thereby catering to users across different linguistic backgrounds and levels of digital proficiency. In parallel, city wide digital literacy campaigns will be launched, targeting various demographic groups—including youth, the elderly, and low-income residents—to build the foundational digital skills required for effective platform utilization. (Jin, D., 2024) This phase lays the groundwork for equitable access and inclusive participation, ensuring that all citizens are prepared to engage with the digital tools made available.

Phase 2: Community-Centered Innovation (2026–2028)

Building on the foundational infrastructure, the second phase emphasizes integrating community-driven innovation and participatory governance features into the SANTER platform. This involves introducing interactive tools that enable citizens to report issues, provide feedback, and participate in public consultations digitally, thereby creating a two-way channel of communication between the government and the populace. To further enrich the platform's relevance and cultural resonance, partnerships will be established with local Micro, Small, and Medium Enterprises (MSMEs), creative industries, and cultural organizations to co create digital content and services. This not only amplifies community ownership but also stimulates local economic and cultural ecosystems. Additionally, to build public confidence in the system and safeguard digital rights, a community-based data privacy and security watchdog will be instituted. This entity will monitor platform practices, provide education on digital rights, and serve as a bridge between users and policymakers, fostering transparency and trust in the digital governance process.

Phase 3: Integrated Ecosystem Development (2028–2030)

The final phase envisions SANTER as a fully integrated digital ecosystem that seamlessly connects local services with national systems and private sector platforms. This phase involves establishing interoperability frameworks that enable SANTER to interact with broader national databases, citizen ID systems, and private service providers across health, transportation, and finance. Additionally, integrating advanced data analytics will support real-time urban planning, resource allocation, and evidence-based policy formulation, significantly enhancing the city's capacity to respond to emerging challenges and opportunities. Beyond technical integration, this phase promotes the embedding of smart city principles into public education and community awareness programs, ensuring that the population understands and engages with the broader goals of digital transformation. Educational curricula, community outreach initiatives, and youth engagement programs will incorporate narratives of digital citizenship, innovation, and sustainability, cultivating a

generation of informed and empowered digital citizens. Here is a structured table summarizing the Roadmap for Inclusive Super-App Development across the three phases:

Table 4.1 Roadmap for Inclusive Super-App Development across the three phases

Phase	**Timeframe**	**Focus Area**	**Key Initiatives**
Phase 1	2025 - 2026	Strengthening Foundations	- Expand internet access, especially in underserved and rural areas. - Redesign user interface with multilingual and voice-based support. - Launch digital literacy campaigns targeting different age groups (youth, elderly, marginalized communities).
Phase 2	2026 - 2028	Community Centered Innovation	- Introduce participatory features such as citizen reporting and feedback tools. - Collaborate with local MSMEs and cultural groups for service/content co- creation. - Establish a community-based data privacy watchdog to increase public trust and transparency.

Phase 3	2028 - 2030	Integrated Ecosystem Development	- Interconnect SANTER with national digital systems and private sector platforms (e.g., health, transport, fintech). - Implement data analytics for smart urban planning and policy decision-making. - Integrate smart city values into education, outreach, and youth engagement programs.

Together, these three phases offer a structured and inclusive pathway for SANTER's evolution into a flagship super-app model that not only delivers efficient public services but also nurtures civic engagement, cultural preservation, and national identity in the digital age.

CONCLUSION

In conclusion, while SANTER presents substantial potential as a cornerstone of Samarinda's ongoing smart city transformation, demonstrating capabilities to integrate diverse public services and enhance administrative efficiency, its overall impact remains limited by several interrelated challenges. These include low user adoption rates, infrastructural inadequacies, and persistent issues of digital exclusion that disproportionately affect marginalized and technologically underserved populations.

To fully realize the platform's transformative potential, strategic efforts must be directed toward narrowing the triad of gaps encompassing cognitive knowledge (awareness and digital literacy), practical-technical proficiency (the capacity to engage with digital tools), and socio-demographic disparities (including age, income, and geographic inequities). Equally important is the intentional embedding of local cultural values and identities into SANTER's digital ecosystem, thereby ensuring that the platform serves utilitarian functions and also serves as a medium for cultural preservation and community empowerment. The evolution of SANTER into a genuinely inclusive, scalable super-app model capable of serving as a benchmark for other intermediate urban centers in emerging economies demands a dual-focus policy orientation. This must strike a balance between technological advancement and proactive initiatives that foster citizen readiness, digital trust, and a culturally responsive governance approach. Only through this integrative framework can SANTER fulfill its vision of democratizing access to digital

public services and fostering an inclusive, participatory, and identity-affirming smart city future for all citizens of Samarinda.

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