

Driving Innovation in Digital Government: A Case Study on JAKI in Jakarta

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ABSTRACT

Jakarta's digital transformation has accelerated through the development of the JAKI (Jakarta Kini) application, the official public service platform of the DKI Jakarta Provincial Government. This case study examines how JAKI enhances public service efficiency, supports data-driven decision-making, and strengthens citizen and government interaction. The study highlights JAKI's contributions during the COVID-19 pandemic, including integrated health services, vaccination booking, and a data-driven risk assessment system. Within the frameworks of digital government and behavioural insights, JAKI demonstrates improved transparency, user engagement, and collaborative governance across public, private, and community sectors. However, the study also identifies major challenges, particularly in privacy protection, data security, user trust, and digital inequality. Although JAKI has implemented technical and legal safeguards, public concerns remain due to past data leaks and limited user experience quality. Overall, the JAKI case provides valuable lessons for sustainable digital government development, emphasizing the importance of accessibility, ecosystem collaboration, privacy protection, and continuous improvement.

KEYWORDS

JAKI; Digital Government; Smart City; Public Service Efficiency; Data-driven Governance; Privacy and Trust; Behavioural Insights.

1. INTRODUCTION

In the wave of modern digital transformation and smart city development, Jakarta, the capital of Indonesia, has showcased its innovation in digital government and public services through the JAKI (Jakarta Kini) application. Developed by the Jakarta Smart City Regional Public Service Agency (BLUD), JAKI is the official public service and information center application of the DKI (Daerah Khusus Ibukota) Jakarta Provincial Government [1]. It aims to enhance the efficiency of public services and provides a convenient digital public service solution for the citizens of Jakarta.

This case study will explore the innovations of the JAKI application in enhancing public service efficiency and data-driven decision-making. It reveals the success factors of JAKI by analysing it within the framework of digital government and behavioural insight theory. In addition, the study debates JAKI's risk management strategies and shortcomings in privacy protection, data security and trust building, and summarises its case lessons in smart city development.

2. INNOVATION NEEDS: DIGITAL TRANSFORMATION, SMART CITY DEVELOPMENT, AND COVID-19

The JAKI application plays a significant role in Indonesia's digital transformation and smart city development. According to the 2021-2024 Digital Indonesia Roadmap, the government focuses on

four key areas: digital infrastructure, digital government, digital economy, and digital society [2]. To achieve these goals, a critical factor is preparing people for digitalization, enabling them to access the digital space in a variety of ways to achieve smarter urban system services [3]. In this context, the construction of digital government becomes an essential component.

Furthermore, Indonesia is one of the countries developing the smart city concept, with many regions already implementing this idea. Effective use of information and communication technology can transform cities into true smart cities [4]. The rapid spread of the virus during the COVID-19 pandemic forced the government to adopt appropriate strategic approaches to address the challenges. During the pandemic, one effective strategy for smart cities was to enable people to engage in safe activities more easily [5].

In the intertwined context of digital transformation, smart city development, and COVID-19, the demand for the JAKI application has become particularly important. Following the onset of COVID-19, the DKI Jakarta government enhanced the JAKI application by adding functions such as health services, COVID-19 zoning maps, virus spread information, and vaccination registration, thereby playing a crucial role in facilitating smart living during the pandemic.

3. INNOVATION ACHIEVEMENTS: ENHANCING EFFICIENCY AND DATA-DRIVEN DECISIONS

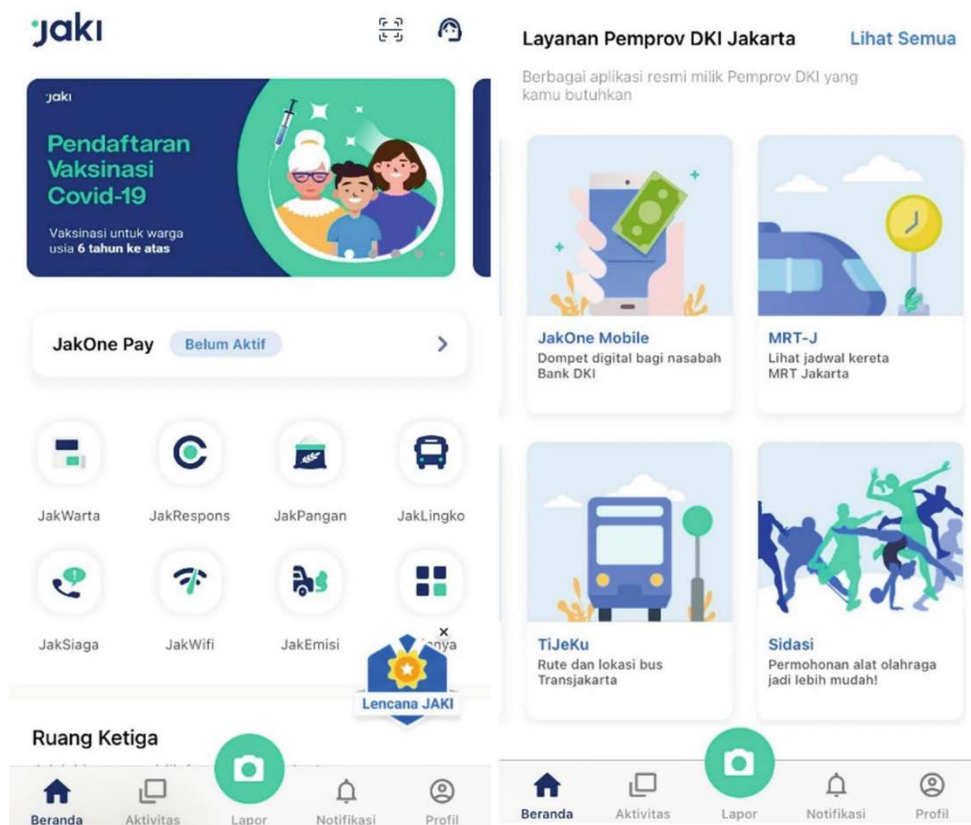


Fig. 1 The Jakarta Kini (JAKI) application dashboard

Firstly, the JAKI application has achieved significant results in enhancing efficiency. As a one-stop service platform designed with citizens in mind, JAKI integrates services provided by the DKI Jakarta government, the community, and industries or startups. Currently, the JAKI platform has integrated 43 applications, including 32 government applications and 11 external applications [6]. This integration simplifies the processes for citizens and improves the efficiency of public services.

Citizens can apply for various services through the JAKI platform, such as traffic violation inquiries, garbage cleaning complaints, and public facility repairs. This results in a more convenient and faster experience for health services, education services, transportation services, public facility services, government services, community services, and business and economic services (Fig. 1).

On the other hand, JAKI is also a data-driven platform. It supports governments with massive amounts of data, enabling them to understand citizens' needs more accurately and thus improve resource allocation and policy making. For example, during the COVID-19, JAKI worked with a Harvard team to develop the CLM (Contact Less Management) feature. This feature collects and analyses usage data from citizens to help them independently assess their risk of exposure to Covid-19. As of 5 November 2020, more than 952,312 users in Jakarta have self-checked through CLM, leading to better public health management [6].

In terms of databases, JAKI combined data feeds from more than 50 applications of the Jakarta Provincial Government and connected to the Citizen ID database, enabling nearly a million citizens to book vaccination appointments within minutes, making Jakarta the first province in the country to succeed in achieving the vaccination target [7]. In addition, JAKI has developed a flood control system by combining artificial intelligence and data. The system accelerates the city's disaster response by analysing data from IoT (Internet of Things), sensors, and weather to predict potential floods, and it won an award in the e-science category at the World Summit on the Information Society ICT (Information and Communication Technology) Application 2022 [7].

As a result of JAKI's achievements in improving the efficiency of public services and being data-driven, it won the first place in the ICT competition organised by the Ministry of Communication and Information Technology (Kemenkominfo) in the category of public services in the Indonesian Entrepreneur Information and Communication Technology (IdentIK) 2020 event [8].

4. EFFECTIVENESS ANALYSIS: DIGITAL GOVERNMENT AND BEHAVIORAL INSIGHTS

The JAKI app demonstrates its innovation and effectiveness within the framework of digital government and behavioural insight theory. Katsonis and Botros [9] state that digital government differs from e-government, which is a one-way government-centred relationship, whereas digital government emphasises two-way interactions between the government and the citizenry through multiple delivery channels. This aligns with the views of Capdevilla and Zarlenga [10], who believe that applications should not only implement top-down models in public services but also foster bottom-up community initiatives. In the JAKI application, we can observe this two-way relationship in practice. For example, citizens can submit reports and complaints through JakLapor and receive timely responses from relevant regional agency organizations (OPD), reflecting the interplay and collaboration between the two entities.

Also, all data related to COVID-19 in the JAKI application are open and transparent and can be accessed by anyone [11]. As Wirtz and Birkmeyer [12] have elaborated, transparency is one of the key elements of open government, and JAKI's good transparency enhances citizens' trust in governmental measures, facilitates the dissemination of public health information, and is an important factor in its effective functioning.

On the other hand, behavioural insight theory can be reflected in JAKI. For example, residents can not only use JAKrespon to report problems or complaints to the government but also use JakSurvei to assess their satisfaction with the outcome. This feedback mechanism enables policymakers to utilise psychosocial factors to promote good decision-making and enhance citizen engagement and satisfaction [13]. In addition, in the context of home-based learning during COVID-19, the JAKsekolah functionality enables students to access age-appropriate learning materials at home [14],

addressing barriers to learning and fulfilling the principle of simplifying the process in behavioural insights.

In summary, within the theoretical framework of digital government and behavioural insights, JAKI has proven its effectiveness by successfully enhancing government-citizen interactions, data transparency, and promoting good decision-making through feedback mechanisms.

5. SUCCESS FACTORS OF JAKI: ACCESSIBILITY AND DIGITAL GOVERNMENT ECOSYSTEM

JAKI's success can be attributed to its commitment to the principle of accessibility. Initially, the JAKI application was available only for Android users, but it has since been expanded to iOS devices and can be downloaded for free from app stores. This move demonstrates JAKI's commitment to covering all citizens of DKI Jakarta. Additionally, JAKI has launched a website (<https://jaki.jakarta.go.id/en/>), where users can freely access information about the various functions and services provided by JAKI [1]. The DKI Jakarta government has also developed guidelines for using the JAKI application to ensure that all social strata can easily access it (Fig. 2).

By offering free downloads in the Play Store and App Store, along with website support, **JakLapor** has maximized community service efficiency, enabling quick responses to citizen complaints and ensuring responses within 24 hours [14]. This quick response mechanism has had a positive impact on the people of DKI Jakarta, providing significant convenience, especially during the COVID-19 pandemic.

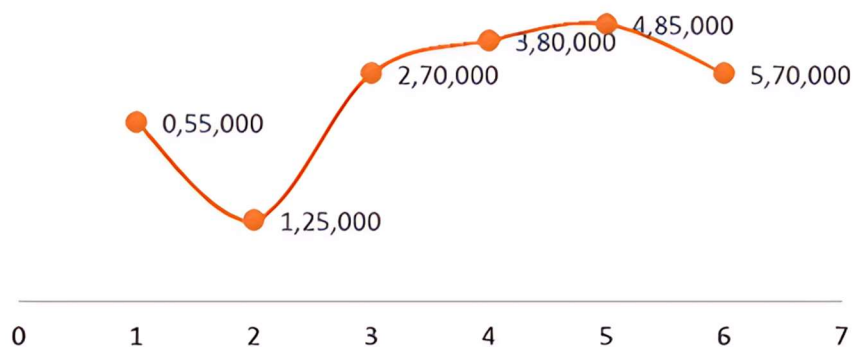


Fig. 2 Visitors to the JAKI Web site

Another key success factor for JAKI is its establishment of a digital government ecosystem. According to the OECD (Organisation for Economic Co-operation and Development), digital government is part of a strategy to create public value, relying on collaboration among government actors, non-governmental organizations, the private sector, and the community [9,15]. JAKI promotes harmonious cooperation between urban stakeholders and the city government, fostering a sense of belonging among citizens as the city evolves.

Jakarta Smart City (JSC), the developer of the JAKI application, recognizes that without the participation of urban stakeholders and residents, the city government cannot work alone. Therefore, JSC aims to be the hub of cooperation, ensuring that city co-creators and the government can work together [6]. JSC's organizational structure includes various departments such as the State Civil Apparatus (ASN), managers, experts, and interns, ensuring cross-departmental collaboration to drive the development and implementation of JAKI. This cross-departmental collaboration avoids the

pitfalls of technology-driven approaches that exclude frontline staff from participation, ensuring involvement and contributions from all parties [1,16].

Moreover, JAKI has fostered digital community and economic growth through partnerships with major e-commerce platforms such as Tokopedia, Bukalapak, Shopee, Gojek, and Grab. These collaborations provide development opportunities for SMEs (Small and Medium-sized Enterprises) and include various services, from training to easy payment for tourist destination tickets, benefiting the public [1]. The collaboration with the private sector underscores JAKI's role in fostering community engagement and digital economic development.

In conclusion, JAKI's success is attributed not only to its broad accessibility but also to its construction of a digital government ecosystem. These two factors collectively enhance JAKI's efficient operation, improve public service efficiency, and strengthen the interaction and trust between citizens and the government.

6. RISK MANAGEMENT AND SUSTAINABILITY ASSESSMENT

The success of JAKI lies in its establishment of a comprehensive digital government ecosystem. However, collecting and processing citizen data involves privacy and security issues. Protecting citizen privacy and ensuring data security are major risks faced by JAKI. According to Wahyudi *et al.* [17], the implementation of smart cities is closely related to data exchange, often facing privacy issues such as insecure data sharing, massive data collection, unauthorized access, and a lack of data protection mechanisms. Additionally, privacy issues can affect citizen trust and societal aspects, such as a lack of trust and concerns about privacy monitoring [18].

6.1. Technical and Legal Risk Management Strategies

Technical Level: JAKI has experienced hacking attacks, such as the incident following the 2024 presidential election debate [19]. In response, the Jakarta Communications, Informatics, and Statistics Office (Diskominfotik) and JSC quickly implemented an information security management system in compliance with ISO/SNI 27001 standards, regularly monitoring security threats and vulnerabilities to ensure user data security [20]. These timely measures effectively alleviated citizen concerns.

Legal Level: The JAKI application strictly adheres to Indonesia's data privacy laws and policies, including the Electronic Information and Transactions Act. By complying with legal regulations, the Jakarta city government ensures that JAKI meets national and international standards in data privacy protection. Additionally, the JAKI official website includes user terms that encompass privacy by design, default privacy, anonymity maintenance, and data security principles [21].

6.2. Continuous Improvement and User Feedback

Continuous improvement is a key factor in JAKI's success. JAKI utilizes features such as JakLapor, JakRespons, and JakSurvei to continually collect user feedback, promptly adjusting and optimizing functionalities to effectively address various risks and challenges encountered during implementation. For instance, since its launch, JAKI has been continuously updated and upgraded, with the latest version being *4.0.14*, released on November 17, 2025. Additionally, the services provided by JAKI are measured through Key Performance Indicators (KPIs) and adjusted based on applicable Regional Strategic Performance (KSD). KSD includes work plans to be implemented in the relevant years, discussed during Musrenbang (development planning community consultations) [1]. This approach ensures that service types and formats can flexibly respond to the rapidly evolving environment and needs.

Through technical measures and legal safeguards, JAKI has made significant progress in protecting citizen privacy and data security. Simultaneously, JAKI ensures efficient and continuous improvement of services by constantly collecting feedback and optimizing functionalities. These measures collectively lay a solid foundation for JAKI's success.

7. CASE LESSONS: TRUST ISSUES AND INTERNET EXPERIENCE FACTORS

One effective way to retain digital government users is by building trust. A lack of citizen trust can undermine, or even cause the failure of, e-government initiatives [22]. Despite JAKI's success, it has not yet reached the highest level of trust [23]. JAKI requires the collection of sensitive personal information from users, including National Identification Numbers (NIK), phone numbers, geolocation, and user activities. Although JAKI's privacy policy promises to protect personal data, there is still a risk of privacy breaches. For instance, there have been incidents where citizen data was leaked while using JAKI's JakLapor feature, causing widespread public concern and reaction [24]. These incidents highlight JAKI's shortcomings in data privacy protection, which is a crucial area for long-term improvement.

Trust issues stem not only from data privacy concerns but also from user internet experience. According to Fauzie *et al.* [25], increasing internet access and usage frequency enhances people's understanding of the potential advantages of technology, particularly in information acquisition, dissemination, online transactions, and interactive communication. However, as of November 20, 2025, the JAKI app has a rating of 3.0 on the iOS platform, with major complaints about technical issues such as app instability, frequent server outages, and lack of service follow-up. Therefore, JAKI needs to evaluate its e-government information system development activities to ensure service quality design and enhance the internet experience.

Additionally, education level significantly impacts trust [25]. The higher the education level, the more likely citizens are to keep up with technological advancements and absorb new technologies. In the context of digital government, substantial disparities in information technology usage may emerge among citizens with different education levels, known as the digital divide. Thus, the government must pay special attention to citizens with lower education levels, providing additional support to ensure they can access e-government services equally, reducing the digital divide and enhancing overall trust.

Overall, the lessons learnt from the JAKI case focus on trust issues and user experience. By strengthening data privacy protection, enhancing the user experience on the Internet, valuing user feedback, and supporting citizens with low levels of education, JAKI can further increase citizens' trust in its services and optimise them.

8. CONCLUSION

The JAKI case highlights that digital government innovation is not solely about technology. It should rather be understood as an interplay between digital systems, institutional design, and citizen behaviour. JAKI's practice demonstrates how data-driven tools can enhance administrative responsiveness and urban resilience, particularly during crises such as the COVID-19 pandemic. However, its limitations are equally revealing. The fragility of user trust and privacy vulnerabilities underscore the legitimacy of digital government rests on governance quality rather than technical sophistication. Moving forward, Jakarta's experience suggests that meaningful digital transformation requires embedding ethical data practices, strengthening multi-stakeholder ecosystems, and cultivating a culture of digital participation that empowers all citizens. This practical lesson emphasises the need for a slower, more reflective digitalisation centred on user trust, safeguards, and

genuine accessibility. These insights extend beyond Jakarta, offering crucial lessons for cities facing similar transitions.

CONFLICTS OF INTEREST

The author declares no conflict of interest.

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