**Technology-based public services: A case study of the Online Single Submission (OSS) system in business licensing**

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**Abstract**

Digitalization of public services has become an important part of bureaucratic reform in Indonesia, with the goal of improving efficiency, transparency, and accountability in various sectors, including business licensing. One of the key steps taken by the government is the implementation of the Online Single Submission (OSS) system, a digital platform that allows business licensing processes to be carried out more quickly and in an integrated manner. This study aims to assess the effectiveness of the OSS implementation in business licensing and identify the challenges and opportunities in its application. Using a case study approach, the research explores various aspects of the OSS system, including its operational mechanism, impact on the business sector, and the challenges faced at both national and regional levels. The results show that the OSS system has significantly accelerated the licensing process, reduced bureaucratic complexities, and improved transparency by documenting all stages of the licensing process digitally. However, challenges remain, such as unequal access to technology across regions and the limited digital literacy of micro, small, and medium business owners. To address these issues, the government needs to continue expanding IT infrastructure and promoting digital literacy. In the long term, OSS is expected to be a key driver of bureaucratic reform, enhancing national economic competitiveness and improving public service delivery.

**Keywords:** technology-based public services, OSS, business licensing, e-government, bureaucratic reforms

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1. **Introduction**

Over the past two decades, digital transformation has significantly impacted various aspects of life, including the delivery of public services. The advancement of information and communication technology (ICT) has opened up new opportunities for governments to improve service quality, aiming for systems that are faster, more transparent, efficient, and accountable. This becomes particularly crucial in Indonesia, where public service delivery still faces persistent challenges such as complex bureaucratic structures, overlapping authorities, and risks of maladministration.

One of the public service areas most affected by bureaucratic inefficiency is business licensing. In the context of economic development and job creation, an effective and responsive licensing system plays a vital role. Lengthy and complicated procedures can hinder economic growth, reduce the country's competitiveness, and discourage potential investors. Therefore, the digitalization of business licensing processes is an essential step toward public service reform, helping to foster more streamlined, responsive, and accessible services.

In response to these challenges, the Indonesian government has introduced the Online Single Submission (OSS) system, a digital platform designed to simplify and accelerate business licensing. The OSS system represents a key effort to reform public services by offering integrated, online-based licensing procedures. As mandated by Government Regulation No. 24 of 2018, the OSS system aims to support ease of doing business through greater efficiency and transparency.

The digitalization of public services is a critical component of broader bureaucratic reform, aiming to enhance effectiveness, reduce administrative burdens, and improve public accountability. Several studies (e.g., Nurlaelah et al., 2021; Puspitasari & Marefanda, 2023) have found that the implementation of OSS has contributed to faster licensing processes and improved public access to services. Nevertheless, challenges remain, including inadequate infrastructure, low digital literacy, and limited readiness among human resources (Kennedy et al.; Rahmatani et al.). These obstacles highlight the need for supportive regulations, targeted training programs, and the strengthening of technical systems to ensure the success of public service digitalization.

This paper aims to provide an in-depth analysis of the role of technology in public service delivery, with a particular focus on the implementation and effectiveness of the OSS system in Indonesia’s business licensing process.

1. **Research Design and Method**

This study adopts a qualitative method, in order to gain a comprehensive understanding of the application of technology in public services. This research is categorized as descriptive research. The quantitative approach is used to assess the level of satisfaction and public perception of the use of digital-based public services, which is obtained through the distribution of questionnaires to users. On the other hand, the qualitative approach aims to explore more deeply the implementation of digital services through interviews with employees of related agencies and system managers, as well as through a review of relevant policy documents and performance reports.

1. **Results and Discussion**

***Concept and role of technology in public services***

The principles of public service delivery

Public service delivery is governed by a set of principles designed to ensure effectiveness, efficiency, and equity in serving the public. One of the fundamental principles is accountability, which requires every public service unit to be responsible for the outcomes of government programs and policies they implement. These responsibilities must be conveyed transparently to stakeholders, including the general public, supervisory bodies, and institutional leadership. As Bovens (2007) explains, public accountability represents a relational mechanism between the actor (service provider) and the forum (such as society or supervisory institutions).

Transparency is another key principle that supports clean and accountable governance. In the context of public administration, transparency obliges service providers to disclose relevant information regarding service procedures, administrative requirements, costs, durations, and outcomes in an open, honest, and accessible manner. This ensures that citizens are adequately informed and able to exercise their rights.

Simplicity is essential in ensuring that public services remain accessible and understandable to people from all walks of life. This principle emphasizes the importance of organizing and delivering services in a manner that is easy to follow, free from unnecessary complexity, and practical in implementation. Services must be structured so that they can be understood by people regardless of their education level, socioeconomic background, or geographical location.

Equity is also a foundational principle, ensuring that every citizen has equal rights in accessing public services. In practice, this means that no one should face discrimination based on ethnicity, religion, gender, social class, political orientation, disability, or any other characteristic. The state must guarantee inclusivity in public service delivery to reflect justice and fairness for all.

Benefits of digitalization in business licensing

The digitalization of business licensing provides numerous advantages that significantly improve the performance of public administration and the ease of doing business. One major benefit is the increased efficiency and effectiveness in service delivery. By digitizing licensing procedures, governments can reduce processing times and operational costs, while also minimizing human errors and improving the accuracy of data management.

Digital systems also foster transparency and accountability in the licensing process. Entrepreneurs can directly monitor the status of their applications, which builds trust and reduces the potential for misuse of authority or corruption. This level of openness encourages a more responsible and responsive bureaucracy.

Moreover, digitalization enhances accessibility, particularly for micro, small, and medium enterprises (MSMEs), which often face barriers in traditional bureaucratic systems. By enabling business actors to complete licensing procedures online, the system reduces administrative burdens and allows them to begin operations more quickly. This streamlined process contributes to increased productivity and faster time-to-market.

From a macroeconomic perspective, easier licensing processes help accelerate business development and stimulate economic growth. By reducing entry barriers for new businesses, digital systems promote a more dynamic and competitive economic environment. Additionally, digital platforms strengthen government responsiveness by allowing for better monitoring, auditing, and evaluation of service performance, ultimately contributing to improved public sector governance.

Challenges in implementing technology in the public sector

Despite its numerous benefits, the implementation of digital technology in public service delivery faces several challenges. One of the most pressing issues is the limited availability of digital infrastructure. Many rural and remote areas lack adequate internet access, making it difficult to deploy digital solutions uniformly across the country. Furthermore, the construction and maintenance of such infrastructure require significant financial investment, which can be a barrier for local governments.

Another challenge is the digital divide and the low level of technological literacy among the population. Urban areas tend to have better access to digital tools and higher digital literacy rates compared to rural regions, creating inequality in service access. In areas where the population is less familiar with digital systems, the adoption of new technologies becomes difficult, thereby reducing the effectiveness of digital service delivery.

The lack of skilled human resources within the public sector also presents a major barrier. Many civil servants are not yet proficient in using digital tools and platforms, necessitating targeted and continuous training programs to develop their capacity. Without adequate investment in human capital, digital transformation efforts risk being ineffective or unsustainable.

Lastly, concerns regarding data security and privacy pose significant risks. As public service systems handle sensitive personal information, any failure to protect this data can undermine public trust. The threat of cyberattacks and data breaches must be addressed through robust regulatory frameworks and technological safeguards to ensure the long-term success of digital public service delivery.

***Online Single Submission (OSS) System***

Legal basis

OSS is an electronic-based business licensing service system developed to improve ease of doing business in Indonesia. Through this platform, business actors can apply for various permits online without having to visit government agencies in person, so that the entire administrative process takes place more efficiently. The legal basis for OSS is Government Regulation Number 24 of 2018 concerning Electronically Integrated Business Licensing Services. This regulation regulates the business licensing process carried out electronically through the OSS platform, with the aim of reducing time and bureaucracy in the business licensing process. In addition, Law Number 23 of 2014 concerning Regional Government is also the basis for regional governments to simplify and accelerate business licensing services through the use of information technology. The OSS system makes it easier for business actors to obtain a Business Identification Number (NIB) which functions as an official identity for licensing needs, including as a replacement for the Company Registration Certificate (TDP) and Importer Identification Number (API). Registration is carried out online via electronic devices, where business actors can follow the progress of the application in real time. The implementation of OSS aims to streamline bureaucracy and increase efficiency in the national business licensing system.

How OSS Works and Main Features

The OSS system works starting from online registration of business actors. After registration, business actors are given a Business Identification Number (NIB) which is a legal identity while fulfilling other functions such as TDP, API, access to customs services and is free of charge when processing it. Through OSS, business actors can start their business operations first, while fulfilling supporting documents according to the commitments that have been set.

One of the main advantages of the OSS system is its ability to provide integrated licensing services, allowing the entire permit application process to be completed on one platform without having to visit various government agencies directly. In addition, OSS adopts a risk-based approach, where the level of risk of a business activity determines the type of permit required. With this method, businesses that are categorized as low-risk can obtain permits with a faster process than businesses that have a high level of risk. Through OSS, business actors can directly access and monitor the progress of their permit applications in real-time using an online platform.

This increases information transparency and simplifies the administrative process. This system also supports various types of businesses, from micro to large scale, both individuals and legal entities. Through the implementation of OSS, the government seeks to accelerate public services in the licensing sector, encourage national economic development, and build a friendlier investment environment for business actors in Indonesia. Through the implementation of OSS, the government seeks to accelerate public services in the licensing sector, encourage national economic development, and build a friendlier investment environment for business actors in Indonesia.

Differences between OSS and conventional licensing systems

The main difference between the OSS system and traditional licensing methods lies in the management and efficiency of the licensing process. In the conventional system, business actors are required to go through long and complex procedures, often involving direct visits to various government agencies. This condition not only takes a lot of time, but also increases the risk of administrative errors and corrupt practices. In contrast, OSS provides convenience and increased efficiency in the business licensing process. Through this digital system, business actors can apply for various types of permits in an integrated manner without having to be physically present at a government office. The entire procedure is carried out electronically, allowing data input only once and allowing real-time monitoring of the application status.

The OSS system also offers flexible access, allowing users to access it anytime and anywhere via electronic devices such as computers, laptops, or smartphones. This convenience allows business actors to manage the licensing process without being limited by location or time. Thus, OSS significantly increases efficiency and openness in the licensing process when compared to conventional methods. In addition, OSS has now evolved into a Risk-Based OSS (OSS RBA), where the licensing process considers the risk level of each type of business. Through this approach, businesses with low risk levels can obtain permits more quickly, thereby encouraging ease of doing business, especially for the Micro, Small, and Medium Enterprises (MSMEs) sector. This system makes the licensing process more flexible and responsive to the needs of the business world, which ultimately contributes to increased investment and national economic growth. Through this digital system, business actors can apply for various types of permits in an integrated manner without having to be physically present at a government office. All procedures are carried out electronically, allowing data input only once and allowing real-time monitoring of the application status. This mechanism not only speeds up the licensing process but also strengthens transparency and accountability. In the OSS system, data inputted by business actors is automatically connected and synchronized between the central and regional governments, thereby minimizing the possibility of administrative errors and accelerating data harmonization. All stages and developments in the licensing process are recorded in the OSS system and displayed transparently. If the permit application is approved, the permit documents can be downloaded immediately on the same day, speeding up service time and making it easier for business actors to immediately start their business operations.

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***Implementation of OSS in public services has an impact on service quality***

Positive impact of OSS implementation

The implementation of the Online Single Submission (OSS) system has brought several notable positive impacts on the business licensing process in Indonesia. One of the most significant contributions is the improvement in efficiency and speed of service delivery. Prior to the adoption of OSS, business licensing procedures were often hampered by lengthy, uncoordinated bureaucratic stages. The digital approach introduced through OSS simplifies and structures the licensing flow, leading to a considerable reduction in processing time. This enhancement not only supports faster business establishment but also aligns with broader efforts to streamline public services.

In addition to accelerating the process, OSS has enhanced transparency and accessibility. Applicants now have easier access to comprehensive, clear, and up-to-date information regarding licensing procedures, application stages, and the status of their submissions. This increased openness helps minimize confusion, miscommunication, and uncertainty that typically plagued the manual licensing systems. It also fosters trust among stakeholders by reducing ambiguity and promoting clearer expectations.

Moreover, OSS significantly reduces bureaucratic complexity. In the traditional model, applicants were required to interact with multiple institutions separately, often leading to delays and procedural redundancies. OSS integrates these diverse processes into a unified digital platform, allowing users to complete the necessary steps in a more cohesive and streamlined manner. This consolidation minimizes administrative burdens and enhances the user experience.

Finally, the presence of OSS contributes positively to the public image of Indonesia’s administrative system. By offering more responsive, efficient, and technology-driven services, the government demonstrates its commitment to improving public sector performance and facilitating ease of doing business. The successful implementation of OSS reflects a strategic move toward modern governance and reinforces public confidence in administrative reform efforts.

Negative impact of OSS implementation

Despite its various benefits, the implementation of the Online Single Submission (OSS) system also presents several challenges that hinder its effectiveness, particularly in certain regions of Indonesia. One of the main obstacles lies in the limitations of technological infrastructure. In many areas, especially in remote or rural regions, the availability of adequate technological devices remains insufficient, and access to stable internet connections is still uneven. Frequent network disruptions negatively affect the smooth operation of the digital licensing process, creating barriers for users attempting to utilize the system effectively.

Another significant issue is the lack of adequate socialization and outreach regarding the OSS system. Many business actors, particularly those from Micro, Small, and Medium Enterprises (MSMEs), as well as residents in remote areas, are still unfamiliar with how the system operates. This includes limited understanding of the benefits offered by OSS, the procedures required to access the platform, and how to navigate its various features. The insufficient dissemination of information creates a gap between the availability of the system and its actual usage among intended beneficiaries.

Furthermore, technical and operational problems remain a persistent concern in the OSS implementation. These include not only the aforementioned infrastructure constraints but also issues related to system performance, software glitches, and the absence of adequate technical support. In regions where digital literacy is low, these problems are exacerbated, leading to inefficiencies and frustration among users. Overall, while the OSS system aims to modernize and simplify licensing procedures, its success is still contingent upon addressing these structural and operational limitations.

***Case study of OSS implementation in business licensing in Indonesia***

Background of OSS Implementation in Indonesia

For years, the business licensing sector in Indonesia has been marked by various obstacles, ranging from complicated procedures, long processing times, to small-scale corruption practices that slow down the process. This condition hampers business activities, both for local entrepreneurs and foreign investors. According to data from the World Bank through the Ease of Doing Business report, before 2018, Indonesia often occupied a less competitive position among ASEAN countries in terms of ease of doing business. In facing these challenges, the Indonesian government took major reform steps in the public service sector, with a primary focus on business licensing. One of the innovations implemented is the Online Single Submission (OSS) system, which was first introduced in 2018 under the supervision of the BKPM, and is now managed by the Ministry of Investment/BKPM.

Issuance of Business Licenses in the Trade Sector – Jakarta

Before the implementation of the OSS system, a small business actor in Jakarta who wanted to open a retail store had to go through various licensing stages separately, such as taking care of the Trade Business License (SIUP), Company Registration Certificate (TDP), and location permits from the village to sub-district levels. This entire process can take quite a long time, between one and three months. However, after the presence of OSS, the process has become much simpler and more efficient. Simply by registering their business online through the OSS platform, business actors can obtain a Business Identification Number (NIB) in less than an hour. The results include: 1) the time required to complete the business legality process, which previously could take months, can now be completed in just a few hours through the OSS system; 2) business actors can reduce various expenses, such as travel costs, unofficial costs, and time previously spent on manual licensing processes; and, 3) ownership of a Business Identification Number (NIB) makes it easier for entrepreneurs to gain access to financing from banking institutions, because the NIB is recognized as a valid legal business document.

1. **Conclusions**

Digital transformation in public services is a crucial element in bureaucratic reform efforts in Indonesia, with a focus on increasing efficiency, openness, and accountability of services. The implementation of the Online Single Submission (OSS) system has had a major impact on the business licensing mechanism, by reducing the time for issuing permits and streamlining the previously complex bureaucratic process. In addition, OSS also strengthens the transparency aspect, because all stages of the licensing process are recorded digitally and can be accessed by applicants directly through a real-time monitoring system. However, there are still obstacles such as inequality in access to technology in various regions and low digital understanding among micro, small, and medium business actors. To overcome this, the government needs to continue to expand information technology infrastructure and encourage increased digital literacy in the community. In the long term, the existence of OSS is expected to be the main driver in strengthening bureaucratic reform and encouraging increased national economic competitiveness.

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