JRBME RESEARCH JOURNAL
JURNAL RISET BISNIS, MANAJEMEN, DAN ILMU EKONOMI
JRBME
ISSN 3047-2415 (ONLINE)

Innovation Transformation Based on a Sustainable Digital Ecosystem at PT Pegadaian: Based on an Interdisciplinary Literature Review

Transformasi Inovasi Berbasis Sustainable Digital Ecosystem pada PT Pegadaian: Berbasis Literature Review Lintas Disiplin

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Abstract

This study aims to examine innovation transformation at PT Pegadaian through a literature review approach with a sustainability perspective. The primary focus of the study is how Pegadaian integrates digital innovation, gold ecosystem development, and financial inclusion within a sustainable development framework that encompasses economic, social, and governance dimensions. The method is a qualitative literature review, compiling and analyzing various academic sources, institutional reports, and empirical studies related to digital transformation in the financial sector. The analysis employs an integrative approach combining classical innovation theory, contemporary innovation theory, and perspectives on sustainability and socio-technical systems. The findings indicate that Pegadaian is undergoing a transformation toward a platform-based financial ecosystem model that has the potential to create sustainable value through the integration of digital services, enhanced financial inclusion, and strengthened organizational governance. The results of the study indicate that Pegadaian is undergoing a transformation toward a platform-based financial ecosystem model that has the potential to create sustainable value through the integration of digital services, increased financial inclusion, and strengthened organizational governance.

Keywords: sustainable innovation, digital transformation, Pegadaian, gold ecosystem, penta helix

Abstrak

Penelitian ini bertujuan untuk mengkaji transformasi inovasi pada PT Pegadaian melalui pendekatan literature review dengan perspektif keberlanjutan (sustainability). Fokus utama penelitian adalah bagaimana Pegadaian mengintegrasikan inovasi digital, pengembangan ekosistem emas, serta inklusi keuangan dalam kerangka pembangunan berkelanjutan yang mencakup dimensi ekonomi, sosial, dan tata kelola. Metode yang digunakan adalah kajian literatur kualitatif dengan mengompilasi dan menganalisis berbagai sumber akademik, laporan institusional, serta studi empiris terkait transformasi digital sektor keuangan. Analisis dilakukan dengan pendekatan integratif yang menggabungkan teori inovasi klasik, teori inovasi kontemporer, serta perspektif sustainability dan sistem sosio-teknis. Hasil kajian menunjukkan bahwa Pegadaian sedang mengalami transformasi menuju model platform-based financial ecosystem yang berpotensi menciptakan nilai berkelanjutan melalui integrasi layanan digital, peningkatan inklusi keuangan, serta penguatan tata kelola organisasi.

Kata kunci: *inovasi berkelanjutan, digitalisasi, pegadaian, ekosistem emas, inklusi keuangan*

1. INTRODUCTION

The development of digital technology over the past two decades has driven fundamental changes in the financial services industry. Digitalization has not only transformed how services are delivered but has also shifted business models, patterns of customer interaction, and the structure of industry competition. In this context, organizations are required not only to innovate rapidly but also to ensure that such innovations are sustainable and inclusive. As a state-owned enterprise, PT Pegadaian possesses a unique characteristic due to its dual mandate: it operates as a business entity that must generate profits while simultaneously serving as a public institution responsible for promoting financial inclusion among the community. This makes Pegadaian's innovation transformation inseparable from social and sustainability dimensions. The transformation undertaken by Pegadaian through the digitization of services such as Pegadaian Digital, the development of gold investment products, and the integration of the financial ecosystem indicates a shift toward a platform-based business model. However, this transformation process does not occur in a vacuum; rather, it is influenced by various external pressures such as fintech disruption, changes in consumer behavior, and government regulations as well as internal pressures, including organizational readiness and work culture. From a sustainability perspective, Pegadaian's innovations are worth examining because they relate not only to operational efficiency but also to how the organization creates long-term value for society. Therefore, this study employs a literature review approach to comprehensively understand this transformation. The main research question in this study is how PT Pegadaian manages innovation transformation in the face of digital disruption while adhering to sustainability principles. This question is then broken down into several analytical questions related to technology integration, financial inclusion, and innovation governance. The purpose of this study is to analyze the transformation of innovation at Pegadaian using an interdisciplinary perspective, as well as to identify the factors that support and hinder the creation of sustainable innovation. This study makes a theoretical contribution by integrating various theories of innovation into a single sustainability framework, as well as a practical contribution to organizations in designing more inclusive and adaptive innovation strategies.

2. LITERATURE REVIEW

Classical Innovation Theory

Classical innovation theory provides a conceptual foundation for understanding how innovations emerge and are adopted within society. Rogers (2003) explains that the process of innovation diffusion does not occur simultaneously, but rather through stages of adoption influenced by the social and economic characteristics of the community. In the context of Pegadaian, this explains why the adoption of digital services is uneven and requires a differentiated segmentation approach. Schumpeter (1942) introduced the concept of creative destruction, emphasizing that innovation is a process that disrupts old systems. However, in modern practice, innovation is often evolutionary through a process of recombination, where old elements are combined with new technologies to create added value. This is clearly evident at Pegadaian, which integrates traditional pawnbroking services with a digital platform.

Contemporary Innovation Theory

Contemporary innovation theory emphasizes the importance of collaboration and organizational adaptability. Chesbrough (2003), through the concept of open innovation, demonstrates that organizations cannot rely solely on internal resources but must open themselves up to external collaboration. Furthermore, Teece (2007) explains that dynamic capabilities are key to maintaining competitive advantage. Organizations must be able to detect environmental changes, seize opportunities, and continuously transform resources. In the service sector, Vargo and Lusch (2008) emphasize that value is not created by the product alone, but through the interaction between service providers and customers. Therefore, Pegadaian's innovation must focus on the overall customer experience.

Sustainability Innovation

The concept of sustainability in innovation was introduced by Elkington (1997) through the triple bottom line approach, which encompasses economic, social, and environmental aspects. In the context of Pegadaian, the economic dimension is reflected in the digitization of services, the social dimension in financial inclusion, and the environmental dimension in waste management-based CSR programs. Geissdoerfer et al. (2017) emphasize that sustainable innovation requires systemic transformation involving various actors and institutions. This demands that organizations focus not only on internal efficiency but also on external impacts on society and the environment.

Ecosystem and Platform Theory

Adner (2017) explains that the success of modern organizations depends heavily on their ability to build integrated ecosystems. In this regard, Pegadaian is striving to build a gold ecosystem that involves various stakeholders in the value chain. The triple helix and penta helix models (Etzkowitz & Leydesdorff, 2000) emphasize the importance of collaboration between government, industry, academia, and the community. This approach is relevant in fostering sustainable and inclusive innovation.

3. METHODS

This study employs a qualitative approach using a literature review method aimed at systematically examining and synthesizing various sources of literature. The research process was conducted in several stages, namely the identification of literature sources, selection based on relevance and credibility, content analysis, and synthesis of findings. Data sources include scientific journals, company annual reports, industry articles, and empirical studies related to Pegadaian's digital transformation. The analytical approach used is thematic analysis, in which the literature is classified into main themes such as digital innovation, sustainability, and business ecosystems. This approach allows the researcher to identify relevant patterns, relationships, and research gaps.

4. RESULTS AND DISCUSSIONS

The innovation-driven transformation undertaken by PT Pegadaian reflects a fundamental shift from a traditional business model toward a digital platform-based model focused on sustainability (a sustainable digital ecosystem). This shift is not merely technological; it also reflects changes in how the organization creates, distributes, and sustains value over the long term. Within this framework, the discussion focuses on the integration of digital innovation, the challenges of transformation, and the sustainability implications of the strategies implemented by Pegadaian.

Transformation Toward a Sustainable Digital Ecosystem

Pegadaian's transformation can be understood as an evolutionary process toward an integrated digital ecosystem, where services no longer operate in isolation but are interconnected within a single platform. This concept aligns with business ecosystem theory, which emphasizes the importance of interactions among actors in creating value (Adner, 2017). Through services such as Pegadaian Digital, Gold Savings, and other financing products, Pegadaian is striving to build a gold ecosystem that encompasses the entire value chain, from acquisition and storage to the monetization of gold assets. From a sustainability perspective, this approach enables resource efficiency, reduces transaction costs, and enhances public access to financial services. Furthermore, digitalization also contributes to economic sustainability by improving operational efficiency and expanding market reach. However, the success of this transformation heavily depends on the level of system integration and the organization's ability to manage the complexity of digital platforms.

The Challenge of Innovation Transformation

Although Pegadaian has made progress in digital innovation, there are various structural and systemic challenges. First, the fragmentation of digital systems is a major obstacle to creating a seamless user experience. The lack of integration between data and services across platforms hinders the creation of network effects, which are key to the success of a digital ecosystem. Second, the gap in human resource capabilities acts as a limiting factor in implementing innovation. Digital transformation requires new competencies such as data analytics, cybersecurity, and digital product management, which are not yet fully and evenly distributed within the organization. Third, data security and privacy risks are critical issues in the digital age. The use of technologies like artificial intelligence in financial services demands robust governance to prevent data misuse and algorithmic discrimination. Fourth, there is a challenge in maintaining a balance between digital innovation and social inclusion. Overly rapid digitalization risks creating exclusion for segments of society with limited access to technology.

Innovation from a Sustainability Perspective

From a sustainability perspective, Pegadaian's innovations can be analyzed through three main dimensions: economic, social, and environmental. From an economic perspective, the digitization of services enhances operational efficiency and boosts the organization's competitiveness. Pegadaian has been able to reduce transaction costs, improve service speed, and expand its customer base through digital platforms. From a social perspective, Pegadaian plays a role in promoting financial inclusion through affordable and easily accessible products. Services such as the Gold Savings program allow people to invest with small amounts, thereby supporting community economic empowerment. From an environmental perspective, CSR programs such as converting waste into gold savings demonstrate efforts to integrate environmental aspects into the business model. This program not only provides economic benefits but also raises public awareness of environmental issues. However, the implementation of sustainability in Pegadaian's innovations still faces challenges regarding strategy integration and impact measurement. Clear indicators are needed to measure the contribution of innovations to sustainability in a holistic manner.

The Role of Dynamic Capabilities and Innovation Governance

The success of Pegadaian's innovation transformation hinges heavily on the organization's ability to develop dynamic capabilities. These capabilities encompass the processes of sensing, seizing, and transforming, which enable the organization to adapt to changes in the environment (Teece, 2007). In the context of Pegadaian, the sensing capability is evident in the identification of digitalization trends and shifts in consumer behavior. The seizing capability is reflected in the development of digital services and innovative products. Meanwhile, the transforming capability is evident in efforts to restructure the organization and enhance human resource competencies. Additionally, innovation governance is a critical factor in ensuring that innovation proceeds effectively and sustainably. This governance encompasses risk management, oversight of ethical technology use, and coordination among organizational units.

Strategic Implications and Directions for Development

Based on the analysis conducted, there are several strategic implications that can serve as the foundation for Pegadaian's future innovation development. First, Pegadaian needs to strengthen the integration of its digital ecosystem to create a more seamless user experience and enhance value for customers. Second, developing human resource capabilities must be a top priority, particularly in the fields of digital technology and innovation management. Third, data governance and information security must be strengthened to maintain public trust and minimize risks associated with digitalization. Fourth, Pegadaian needs to develop a digital inclusion strategy that ensures all segments of society can access financial services equitably. Fifth, the integration of sustainability principles into business strategy must be carried out systematically, including in the planning, implementation, and evaluation of innovations.

Critical Insight

Critically, Pegadaian's transformation highlights an innovation paradox: organizations must move quickly to adopt technology while still upholding the social values that underpin their very existence. If innovation is overly focused on efficiency and profit, there is a risk of marginalizing certain segments of society. Conversely, if the focus is too narrowly on the social mandate, the organization may lose its competitive edge in an increasingly competitive industry. Therefore, the success of Pegadaian's innovation lies in its ability to balance these two aspects through an inclusive, adaptive, and sustainable approach.

5. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Pegadaian's innovation transformation demonstrates that the organization is moving toward a sustainable business model based on a digital ecosystem. The integration of classical and contemporary innovation theories reveals that the success of innovation is determined not only by technology, but also by organizational capabilities and the social context.

Recommendations

Strengthening sustainable innovation requires an integrated strategy, including the development of digital capabilities, the strengthening of data governance, and the improvement of public financial literacy.

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