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Technology-driven digital transformation of gold pawn services at Pegadaian Indonesia: Opportunities and challenges

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ABSTRACT
Background: Digital transformation has become a strategic priority for financial institutions seeking greater efficiency, transparency, and service quality. Yet most existing research focuses on banking and fintech, leaving non-banking, asset-based financial services largely unexplored. This study addresses that gap by examining digital transformation in gold pawn services, focusing on its key drivers, opportunities, challenges, and organizational impact within a state-owned financial institution in Indonesia. **Methods:** Using a qualitative case study approach, the research draws on secondary data from institutional reports, policy documents, corporate publications, and academic literature, analyzed through thematic coding and interpretative synthesis grounded in an information systems perspective. **Findings:** Findings show that integrated digital platforms and centralized information systems play a central role in improving efficiency, ensuring reliable data, and strengthening coordination. Digital transformation also opens opportunities to enhance transparency, customer experience, and financial inclusion, though the process faces real obstacles, including outdated legacy systems, limited organizational readiness, gaps in human capability, and the complexities of change management. Overall, this transformation tends to unfold gradually and depends heavily on context, requiring alignment between technology, organizational capacity, and the specific nature of the service. **Conclusion:** The study shows that digital transformation tends to unfold gradually and depends heavily on context, requiring alignment between technology, organizational capacity, and the specific nature of the service. Digital platforms also shape communication between stakeholders and reshape service interaction patterns within the institution. **Novelty/Originality of this article:** By extending digital transformation frameworks, largely developed within banking and fintech, into the underexplored domain of gold pawn services, this study offers an original theoretical contribution. It examines how integrated digital platforms reshape communication, coordination, and service delivery in asset-based financial operations, while offering practical insights for practitioners and policymakers designing context-aware digital strategies.

KEYWORDS: digital transformation; gold pawn services; information systems; non-banking financial services; qualitative case study.

1. Introduction

Digital transformation has emerged as a central theme in information systems and management research, particularly in the context of financial services. Recent studies emphasize that digital transformation is not merely the adoption of digital technologies, but a fundamental transformation of organizational structures, business processes, and value creation mechanisms enabled by information systems (Vial, 2019; Verhoef et al., 2021).

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Recent studies emphasize that the integration of digital platforms, the use of data-oriented decision processes, and the ability of systems to interoperate constitute essential pillars for improving operational performance and fostering service innovation within financial institutions (Warner & Wäger, 2019; Dong et al., 2019).

Recent digital transformation studies further emphasize that the success of digital initiatives in financial services is highly dependent on organizational capabilities and governance structures. Warner & Wäger (2019) emphasize that the long-term success of digital transformation relies on the development of dynamic capabilities, particularly the ability to recognize emerging digital opportunities and to reconfigure internal organizational resources in response to ongoing technological change. Similarly, Kane et al. (2019) highlight that leadership commitment and organizational culture play decisive roles in determining whether digital transformation initiatives generate long-term value. These perspectives indicate that digital transformation should be understood not merely as the adoption of new technologies, but as an ongoing strategic and managerial endeavor that evolves progressively over time.

Current digital transformation literature has predominantly concentrated on banking organizations, fintech enterprises, and large-scale multinational corporations. Empirical evidence shows that digital transformation initiatives in these contexts enhance efficiency, transparency, and customer experience, while simultaneously requiring strong organizational capabilities and dynamic adaptation (Sebastian et al., 2017; Kane et al., 2019). From an information systems viewpoint, digital transformation is widely regarded as a continuous and adaptive process resulting from the interaction among technological infrastructures, organizational preparedness, and human competencies (Vial, 2019; Verhoef et al., 2021; Nambisan et al., 2017). Collectively, these studies establish a strong theoretical basis for explaining the ways in which digital technologies reshape the structure and delivery of financial services.

Nevertheless, the existing body of research provides limited attention to traditional and non-banking financial service models, particularly those involving pawn-based and asset-backed lending mechanisms. Research on microfinance and alternative financial services suggests that digitalization can improve service outreach and efficiency, yet these studies often adopt a generalized perspective without examining domain-specific operational characteristics (Hendriarto et al., 2021; Pratama & Aziz, 2022). In addition, prior research rarely explores how legacy systems, asset valuation processes, and short-term lending mechanisms influence digital transformation outcomes in pawn services. Consequently, empirical understanding remains insufficient regarding how digital transformation processes develop within institutions operating outside conventional banking or fintech environments.

This study addresses this gap by examining technology-driven digital transformation in gold pawn services at Pegadaian Indonesia, a state-owned enterprise with a strategic role in financial inclusion. Unlike banking institutions, gold pawn services involve unique operational processes such as physical asset valuation, collateral management, and short-term credit cycles, which present distinct challenges and opportunities for digitalization. By examining technological drivers, opportunities, and implementation challenges in this specific context, the present study advances the state of the art in digital transformation research and contributes empirical insights to the information systems literature on non-banking financial services. The specific research gap addressed by this study is twofold. First, existing digital transformation literature lacks empirical investigation of non-banking, asset-based financial institutions, where operational processes such as physical asset valuation, collateral management, and short-term credit cycles differ substantially from conventional banking services. Second, prior studies rarely articulate how domain-specific constraints, including reliance on legacy systems, asset-intensive transaction processes, and established organizational routines, shape digital transformation trajectories in pawn-based financial services (Hess et al., 2016; Hanelt et al., 2021). This study explicitly addresses both gaps by providing a theoretically grounded, empirically informed analysis of digital transformation in gold pawn services.

Beyond organizational efficiency, digital transformation in financial services simultaneously reconfigures the communication infrastructure through which institutions engage with their stakeholders. Digital platforms, as mediating technologies, fundamentally alter the nature, frequency, and form of interactions between service providers and customers. In non-banking financial institutions such as gold pawn services, platform-mediated communication channels reshape customer engagement, trust formation, and service experience. Situated within this broader context, the present study also contributes to the emerging discourse on digital communication ecosystems by examining how technology-driven transformation affects stakeholder communication practices in asset-based financial services (van Dijck et al., 2018; Poell et al., 2019).

Digital transformation research increasingly recognizes the centrality of communication processes in shaping organizational change. From a digital communication perspective, transformation involves not merely the adoption of new technologies, but the reconfiguration of communicative practices, information flows, and stakeholder interaction patterns enabled by digital platforms (van Dijck, 2013). Platform studies scholars emphasize that digital platforms function as socio-technical infrastructure that mediates institutional communication, algorithmic governance, and user behavior (van Dijck et al., 2018). Critical technology perspectives further highlight that digital systems embed particular values, power asymmetries, and communicative norms that shape how organizations and their stakeholders interact (Baym, 2015). These perspectives suggest that analyzing digital transformation solely through an organizational efficiency lens risks overlooking the broader communicative and socio-cultural dimensions of technological change.

Recent scholarship on platformization highlights how the embedding of platform logic into organizational practices reshapes service delivery, user engagement, and institutional governance (Poell et al., 2019). In financial services, platformization enables new forms of digital trust through transparency mechanisms, real-time transaction visibility, and algorithmic accountability. Digital trust is particularly relevant in asset-based financial services, where customer confidence in transaction security and collateral management directly influences service adoption and retention. Furthermore, the concept of digital ecosystems, networks of interconnected digital services, platforms, and stakeholders, provides a valuable theoretical lens for understanding how non-banking financial institutions embed themselves within broader digital financial infrastructures (Tiwana et al., 2010; van Dijck et al., 2018). Collectively, these theoretical perspectives extend the analytical scope of digital transformation research beyond organizational efficiency toward communicative, cultural, and relational dimensions of technological change.

2. Methods

The research methodology adopted in this study is presented in Figure 1, which depicts the sequential phases employed to investigate technology-driven digital transformation within gold pawn services. The framework begins with the formulation of the research objective and the selection of a qualitative case study design, enabling an in-depth examination of organizational processes and contextual factors within a real institutional setting. The research object is Pegadaian Indonesia, a state-owned enterprise selected due to its strategic role in financial inclusion and its ongoing initiatives to digitize traditional pawn services.

As shown in Figure 1, the data collection process relies primarily on secondary data sources, including institutional reports, policy documents, company publications, and peer-reviewed academic literature. These data sources provide comprehensive and validated information on digital transformation practices without direct operational intervention. The analytical framework is structured around three main dimensions, technological drivers, opportunities, and challenges, which guide the systematic categorization and interpretation of the collected data. The final stage of the framework, as depicted in Figure 1, involves qualitative content analysis to process and interpret the data. This analysis

includes data condensation through thematic coding, data display in structured narrative form, and conclusion drawing to identify patterns and relationships. To maintain methodological rigor, this study applies data triangulation and draws upon established theories in digital transformation and information systems, thereby producing validated findings that capture both the opportunities and challenges associated with technology-driven transformation in gold pawn services.

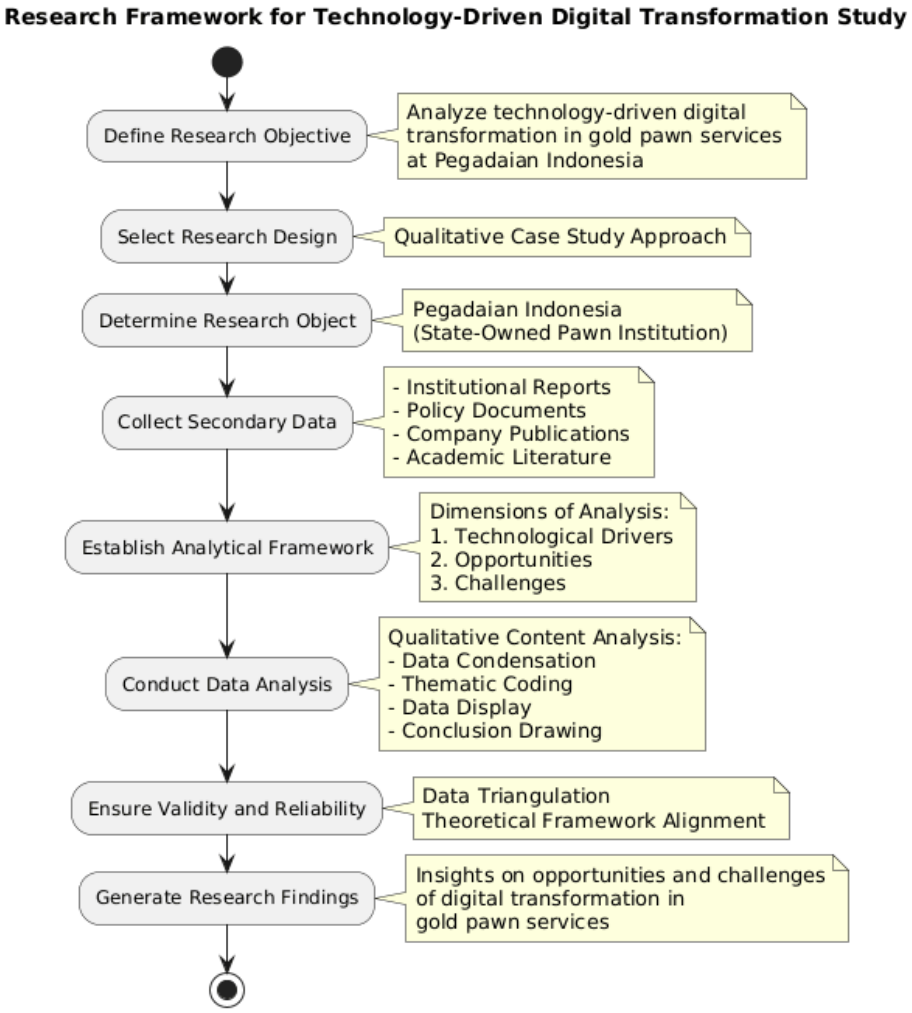


Fig.1. The research framework of the study

2.1 Research design

This research adopts a qualitative case study approach to explore technology-driven digital transformation in gold pawn services. A qualitative design is considered appropriate given that digital transformation represents a multifaceted and context-sensitive phenomenon encompassing technological, organizational, and human aspects. Qualitative case studies allow researchers to explore such complexity by capturing processes, interactions, and contextual factors within real organizational settings (Yin, 2018; Creswell & Poth, 2018). From an information systems perspective, qualitative case studies are widely used to investigate how digital technologies reshape organizational practices and service delivery models over time (Walsham, 2017). Rather than testing predefined hypotheses, this study seeks to develop an in-depth understanding of how digital transformation is implemented and experienced within a specific institutional context. Accordingly, the qualitative case study design supports the exploratory and explanatory objectives of this research.

2.2 Research object and case selection

The research object of this study is Pegadaian Indonesia, a state-owned enterprise that provides pawn-based and gold-backed financial services in Indonesia. The choice of Pegadaian Indonesia as a single-case study is grounded in several considerations. Primarily, the institution holds a strategic position in advancing financial inclusion by providing services to customer segments that often have limited access to conventional banking systems. Second, Pegadaian Indonesia has actively implemented digital initiatives aimed at modernizing traditional pawn services, making it a relevant and information-rich case for studying digital transformation.

Case selection in qualitative research prioritizes relevance and theoretical contribution rather than statistical representativeness (Yin, 2018). In this regard, Pegadaian Indonesia represents a critical case for understanding how digital transformation unfolds in non-banking financial service institutions that rely on asset-based valuation and short-term lending cycles. These characteristics differentiate gold pawn services from conventional banking and fintech models and justify the selection of this case.

2.3 Data sources and data collection techniques

The study predominantly utilizes secondary data to examine digital transformation practices within the selected institutional context. Secondary data were collected from publicly available institutional reports, policy documents, company publications, and official communications related to digital service initiatives. In addition, peer-reviewed academic literature was used to support the analytical framework and theoretical grounding of the study. The use of secondary data is appropriate for organizational and policy-oriented research where access to internal processes may be limited (Johnston, 2017). Secondary data provide a cost-effective and ethically sound means of examining institutional practices while allowing researchers to draw upon verified and authoritative information sources. To enhance data completeness, the study also incorporates industry reports and regulatory publications that contextualize digital transformation within the broader financial services environment (Organization for Economic Co-operation and Development (OECD, 2020)).

The data selection process followed predefined inclusion criteria to ensure analytical rigor and minimize selection bias. Documents were included if they: (1) were published by Pegadaian Indonesia or relevant regulatory bodies (e.g. Financial Services Authority), (2) directly addressed digital transformation initiatives, information systems deployment, or digital service development, and (3) were published between 2015 and 2023 to ensure temporal relevance to the ongoing digital transformation era. Primary documentary sources included Pegadaian Indonesia's Annual Reports (2018–2022), corporate sustainability and governance reports, Financial Services Authority/*Otoritas Jasa Keuangan* (OJK) regulatory publications, and peer-reviewed academic literature retrieved from Scopus and Web of Science databases. This structured selection process ensured that the analytical sample was representative of the institution's documented digital transformation trajectory.

2.4 Analytical framework and research variables

The analytical framework of this study is derived from established digital transformation and information systems literature (Vial, 2019; Verhoef et al., 2021). The framework consists of three interrelated analytical dimensions: technological drivers, opportunities, and challenges. Technological drivers refer to digital platforms, system integration, and data management capabilities that enable service digitalization. Opportunities encompass improvements in operational efficiency, transparency, accessibility, and customer experience resulting from digital initiatives. Challenges include constraints related to legacy systems, organizational readiness, digital skills, and user

adaptation. These dimensions function as analytical constructs that direct the structured analysis and interpretation of the collected data.

2.5 Data analysis procedure

Data were analyzed using qualitative content analysis, which facilitates the systematic examination of textual materials through processes of categorization and thematic analysis. The analysis followed an iterative process consisting of data condensation, data display, and conclusion drawing (Miles et al., 2019). During data condensation, relevant information related to digital transformation initiatives was identified and coded according to the predefined analytical dimensions. The coded data were then organized into thematic categories to facilitate pattern recognition and cross-comparison. Data display was conducted in narrative and tabular forms to support analytical clarity. Finally, conclusions were drawn by identifying relationships between technological drivers, opportunities, and challenges, and by linking empirical findings to existing theoretical perspectives on digital transformation. This analytical approach ensures transparency and traceability between data sources, analysis, and research findings.

2.6 Validity, reliability, and research rigor

To enhance the rigor and trustworthiness of the qualitative findings, multiple validation strategies were implemented. Data triangulation was conducted by cross-examining information from various secondary sources, including institutional records, policy documents, and relevant academic studies. Triangulation enhances credibility by reducing the risk of bias associated with single-source data (Denzin, 2017). Furthermore, theoretical triangulation was achieved by interpreting findings through multiple perspectives in digital transformation and information systems research (Vial, 2019; Nambisan et al., 2017). The application of established analytical frameworks and transparent analytical procedures strengthens the reliability and reproducibility of the study. Although the results are context-specific, the methodological approach yields analytical insights that may be transferable to comparable non-banking financial service environments.

To further strengthen the validity and reliability of the qualitative coding process, the study employed both inductive and deductive coding procedures. Inductive coding allowed emergent themes to surface from the data without imposing pre-set categories, while deductive coding systematically applied analytical constructs derived from established digital transformation and information systems theories. Coding reliability was maintained through consistent definitional criteria for each analytical category and systematic documentation of coding decisions across all data sources. Member checking was approximated through cross-referencing coded themes with multiple independent secondary sources, thereby enhancing the credibility and confirmability of the analysis (Creswell & Poth, 2018; Miles et al., 2019).

2.7 Research limitations and methodological scope

This study recognizes several methodological limitations that should be considered when interpreting the results. The reliance on secondary data restricts direct observation of internal organizational dynamics and user behavior. Although secondary data provide reliable and authoritative information, they may not fully capture informal practices and individual perceptions related to digital transformation initiatives. Additionally, the single-case study design concentrates on a specific institutional setting, which may constrain the broader generalizability of the findings to other financial service organizations.

Nevertheless, these limitations are consistent with the exploratory nature of qualitative case study research. As argued by Yin (2018), the purpose of case study research is analytical generalization rather than statistical generalization. Therefore, the

methodological scope of this study is appropriate for generating in-depth insights into digital transformation in gold pawn services and for informing future comparative or mixed-method research.

2.8 Analytical rigor and trustworthiness

Throughout the data analysis process, the study consistently adheres to established qualitative research principles to ensure analytical rigor and trustworthiness. Document selection was guided by relevance, credibility, and consistency with the research objectives. Official institutional publications, policy documents, and peer-reviewed academic sources were prioritized to minimize bias and enhance data reliability. The use of multiple data sources enabled cross-verification of key themes and strengthened the robustness of the analysis. In addition, transparency was maintained by explicitly defining analytical categories and systematically linking empirical observations to theoretical constructs. This approach aligns with qualitative research best practices, which emphasize clear documentation of analytical procedures to enhance study credibility (Miles et al., 2019; Yin, 2018). Although the study relies on secondary data, the structured analytical framework and systematic coding process ensure that findings are grounded in empirical evidence rather than subjective interpretation. Consequently, the methodological rigor of this study supports the validity of its conclusions and provides a reliable foundation for future research.

3. Results and Discussion

3.1 Technological drivers of digital transformation

The findings indicate that digital transformation within gold pawn services is predominantly driven by the adoption of integrated digital platforms supported by centralized information systems. These systems support online customer registration, digital documentation, and consolidated transaction records, which significantly reduce manual processing and administrative fragmentation. In gold pawn operations, where accuracy in asset valuation and transaction recording is critical, system integration plays a key role in minimizing operational errors and improving service reliability. From a theoretical perspective, these findings are consistent with information systems literature that identifies digital infrastructure as a foundational enabler of organizational transformation (Nambisan et al., 2017; Vial, 2019). Integrated systems enable real-time data access and cross-functional coordination, which are essential for transforming traditionally siloed service processes. In line with Nambisan et al. (2017), digital technologies in this context act as generative resources that reshape service workflows rather than merely automating existing procedures.

In the case of Pegadaian Indonesia, technological drivers also support scalability and service standardization across operational units. This observation is consistent with the arguments of Sebastian et al. (2017) and Verhoef et al. (2021), who emphasize that established organizations depend on strong digital infrastructures to achieve sustainable transformation outcomes. Therefore, the results suggest that technological readiness is a necessary, though not sufficient, condition for effective digital transformation in gold pawn services. Theoretically, this trajectory mirrors Nambisan et al.'s (2017) concept of digital innovation as a generative process, wherein digital platforms progressively reshape organizational routines and service logics rather than merely automating existing procedures. The observed shift from fragmented, paper-based transaction management toward integrated digital processing at Pegadaian Indonesia can thus be understood as both a technological and an organizational transformation, aligning with Vial's (2019) conceptualization of digital transformation as a multidimensional organizational evolution driven by the interplay between technological infrastructure, human capabilities, and strategic intent.

3.2 Opportunities arising from digitalization

The analysis indicates that digital transformation creates multiple opportunities at both service and organizational levels. One major opportunity is the improvement of service efficiency, as digital platforms reduce processing time and enable faster customer interactions. Customers benefit from improved access to service information and clearer transaction tracking, which reduces uncertainty and enhances perceived service quality. In addition, digitalization contributes to greater transparency through structured and traceable digital records. Such foundations are particularly crucial in pawn-based financial services, where customer trust significantly influences decision-making processes. The provision of transparent and traceable transaction records enhances customer confidence and corresponds with earlier studies that highlight the role of digital technologies in strengthening trust and improving customer experience in financial services (Kane et al., 2019; Pratama & Aziz, 2022).

From a managerial standpoint, the opportunities extend to data-driven decision-making and performance monitoring. Digital records provide valuable insights for service evaluation, risk management, and strategic planning. Moreover, the results align with Warner & Wäger (2019), who contend that digital transformation enables organizations to cultivate dynamic capabilities that facilitate continuous organizational adaptation. Thus, the results demonstrate that digitalization in gold pawn services generates value beyond operational efficiency by enabling strategic and organizational improvements. Digital platforms in gold pawn services also serve as critical communication infrastructure, fundamentally reshaping how the institution engages with its customers. Online registration systems, digital notification mechanisms, and mobile service interfaces alter the communication modalities through which service information is conveyed, collateral conditions are communicated, and transaction confirmations are delivered. These platform-mediated interactions represent a structural shift from face-to-face communication paradigms toward digitally structured engagement, with significant implications for how customers perceive service quality, institutional trust, and accessibility. This communicative dimension of digital transformation extends the analytical scope beyond operational efficiency, pointing toward the emergence of new service relationship models mediated by digital platforms (van Dijck et al., 2018).

3.3 Organizational and technological challenges

Despite the identified benefits, the results reveal several challenges that constrain the effectiveness of digital transformation initiatives. One significant challenge is the persistence of legacy systems that are not fully compatible with newer digital platforms. This limits system interoperability and reduces the potential benefits of integration. The challenges identified in this study mirror common obstacles encountered by incumbent organizations undergoing digital transformation initiatives (Hess et al., 2016; Chanias & Hess, 2016).

Organizational readiness also emerges as a critical challenge. Specifically, disparities in employees' digital competencies and resistance to organizational change may hinder the effective adoption and utilization of digital systems. This finding supports prior research suggesting that successful digital transformation requires not only technological investment but also the development of organizational culture and capabilities (Walsham, 2017; Verhoef et al., 2021). In the absence of adequate training programs and structured change management, digital initiatives are likely to remain underutilized. Furthermore, user adaptation among customers presents an additional constraint. Differences in digital literacy may affect how customers engage with digital services, particularly in contexts where traditional face-to-face interactions have long been dominant. These challenges highlight that digital transformation in gold pawn services is shaped by human and organizational factors as much as by technological ones, reinforcing the multidimensional nature of the transformation process.

3.4 Cross-dimensional analysis and synthesis

As summarized in Table 1, the interplay between technological drivers, emerging opportunities, and implementation challenges demonstrates that digital transformation in gold pawn services represents a complex and interconnected process. Technological drivers enable efficiency and transparency, but their impact is moderated by organizational readiness and user adaptation. Opportunities generated through digitalization can only be fully realized when challenges related to legacy systems and human factors are systematically addressed. This synthesis reinforces the understanding of digital transformation as a continuous and adaptive journey rather than a singular technological intervention (Vial, 2019; Verhoef et al., 2021). Compared to studies focusing on banking and fintech contexts, the findings highlight how asset-based valuation and short-term lending cycles introduce unique constraints and requirements for digital transformation. Consequently, the results contribute empirical evidence that extends existing digital transformation theories to non-banking financial services.

Table 1. Summary of digital transformation results in gold pawn services

Dimension	Key Finding	Discussion and Implications
Technological Drivers	The adoption of integrated digital platforms and centralized information systems enables faster transaction processing, improved data accuracy, and better coordination across operational units.	These findings indicate that information systems function as core enablers of digital transformation by reducing process fragmentation and supporting real-time decision-making in gold pawn services at Pegadaian Indonesia.
Opportunities	Digitalization enhances service efficiency, transparency, and accessibility by allowing customers to access service information, monitor transaction status, and reduce dependency on physical visits.	The results demonstrate that digital transformation contributes to a more customer-oriented service model and strengthens trust through transparent digital records, supporting broader financial inclusion objectives.
Challenges	Legacy systems, limited organizational digital readiness, and varying levels of user adaptation hinder the optimal implementation of digital transformation initiatives.	These challenges highlight the importance of change management, continuous system modernization, and capacity-building programs to ensure the sustainability of digital transformation efforts.

3.5 Implications for theory and practice

From a theoretical standpoint, this study contributes to the information systems and digital transformation literature by offering context-specific insights into gold pawn services, a domain that has received limited scholarly attention. The findings confirm that established digital transformation frameworks are applicable beyond banking and fintech environments, while also requiring contextual adaptation. Practically, the results offer guidance for financial service managers and policymakers in designing digital transformation strategies that balance technological innovation with organizational readiness. Investments in system integration should be accompanied by continuous training and change management initiatives to ensure sustainable transformation outcomes. These implications underscore the importance of aligning technology, people, and processes in advancing digital transformation in traditional financial service institutions.

3.6 Comparison with previous digital transformation studies

When compared to prior studies focusing on banking and fintech sectors, the findings reveal both shared patterns and distinct contextual characteristics. Similar to banking institutions, digital transformation in gold pawn services is driven by the need for efficiency, transparency, and improved customer experience (Verhoef et al., 2021). However, unlike fintech firms that are digitally native, gold pawn services operate within legacy organizational structures that require gradual and incremental transformation. Furthermore, previous studies emphasize that digital transformation in financial services often prioritizes customer-facing technologies, such as mobile applications and digital payment systems (Kane et al., 2019). Notably, the results suggest that back-end system integration and data management capabilities are equally essential in gold pawn services, given the asset-based nature of transactions and the importance of accurate valuation. This comparison highlights the importance of contextualizing digital transformation strategies based on service characteristics and institutional history.

3.7 Practical and policy implications

The study also provides practical implications for managers and policymakers in the financial services sector. From a managerial perspective, digital transformation initiatives in gold pawn services should emphasize system interoperability and data accuracy to ensure reliable asset valuation and transaction integrity. Investments in digital infrastructure need to be accompanied by continuous employee training and change management programs to enhance organizational readiness and reduce resistance to change. From a policy perspective, regulators and policymakers can leverage these findings to design supportive frameworks that encourage digital transformation in non-banking financial services. Policies that promote digital literacy, interoperability standards, and data security can facilitate more inclusive and sustainable digital financial ecosystems. By addressing both technological and organizational dimensions, policymakers can help traditional financial institutions transition toward more resilient and customer-oriented service models.

Beyond operational efficiency, the results indicate that digital transformation fundamentally reshapes organizational communication patterns and stakeholder interaction dynamics. The integration of centralized information systems enables real-time information sharing across organizational units, reducing communication latency and improving decision-making coordination. From a stakeholder perspective, digital platforms create new interaction modalities through which customers engage with the institution, shifting from branch-based, face-to-face communication toward asynchronous, platform-mediated service interactions. These changes have significant implications for how institutional trust is established, maintained, and potentially disrupted within digitally transformed financial service relationships, and should inform both managerial strategy and policy design in the digital financial ecosystem (Kane et al., 2019; Poell et al., 2019).

3.8 Organizational capability development and change management

Furthermore, the findings underscore the critical role of organizational capability development in determining the effectiveness of digital transformation efforts. While technological infrastructure enables automation and data integration, the organization's capacity to adapt its routines, skills, and governance mechanisms ultimately determines the extent to which digital solutions are fully leveraged. This insight aligns with digital transformation research that highlights the importance of dynamic capabilities in identifying technological opportunities and reconfiguring organizational resources (Warner & Wäger, 2019). Change management emerges as a central mechanism through which organizational capabilities are developed. The shift from manual, face-to-face service delivery toward digitally enabled processes necessitates the adoption of new roles,

workflows, and competencies by employees. Prior studies argue that resistance to change and limited digital skills often constrain transformation outcomes in established financial institutions (Kane et al., 2019; Walsham, 2017). In the context of gold pawn services, these challenges are amplified by long-standing operational routines and reliance on human judgment in asset valuation.

Moreover, the findings suggest that continuous training and learning initiatives are necessary to support sustainable digital transformation. Digital technologies evolve rapidly, requiring organizations to invest not only in initial system implementation but also in ongoing capability enhancement. Accordingly, digital transformation should be viewed as an iterative organizational learning process rather than a one-off implementation project (Vial, 2019). Consequently, the development of organizational capabilities becomes a strategic priority that complements technological investment in non-banking financial services.

3.9 Implications for non-banking financial service transformation

Beyond the specific case of gold pawn services, the findings provide broader insights into digital transformation within non-banking financial services. Unlike banking institutions and fintech firms that often operate with digitally native infrastructures, traditional non-banking financial institutions tend to experience stronger constraints related to legacy systems, established organizational routines, and regulatory compliance. The results indicate that digital transformation in such contexts commonly follows an incremental trajectory, with initial emphasis on internal system integration and process standardization before expanding to more advanced digital services. This pattern is consistent with prior studies on digital transformation in established organizations, which highlight gradual and path-dependent transformation processes (Sebastian et al., 2017; Verhoef et al., 2021).

Furthermore, the asset-based nature of gold pawn services introduces specific operational requirements that shape digital transformation outcomes. Activities such as collateral valuation, short-term lending cycles, and transaction verification require high levels of data accuracy, reliability, and procedural control. Information systems research suggests that in such settings, digital technologies should support transparency and consistency rather than focusing solely on speed and flexibility (Vial, 2019; Günther et al., 2017). Consequently, digital transformation strategies in non-banking financial services must be aligned with domain-specific operational characteristics to ensure service integrity.

From a theoretical perspective, these findings support the argument that digital transformation frameworks developed in banking and fintech contexts cannot be applied uniformly across all financial service models. Instead, they require contextual adaptation that accounts for differences in service logic, organizational capabilities, and technological maturity (Verhoef et al., 2021; Hanelt et al., 2021). By providing empirical insights from gold pawn services, this study contributes to a more inclusive understanding of digital transformation in financial services beyond conventional banking environments.

3.10 Integrated discussion and theoretical synthesis

This study integrates its empirical findings by demonstrating that digital transformation in gold pawn services is shaped by the interaction between technological infrastructure, organizational capabilities, and service-specific characteristics. The results show that integrated digital platforms and information systems act as key enablers of transformation, but their effectiveness depends on organizational readiness, human capabilities, and compatibility with existing operational processes. This integrated perspective further supports the notion of digital transformation as a continuous and evolving process, rather than a discrete technological upgrade (Vial, 2019).

Consistent with information systems theory, the findings indicate that digital technologies act as generative resources that progressively reshape organizational routines

and service delivery models over time (Nambisan et al., 2017; Günther et al., 2017). However, in traditional financial service institutions, digital innovation must be balanced with stability and control, particularly when services involve physical assets and risk-sensitive transactions. This balance underscores the importance of aligning digital initiatives with organizational structures, governance arrangements, and levels of process maturity (Hess et al., 2016; Warner & Wäger, 2019).

By integrating empirical findings with established digital transformation theories, this study contributes to the literature in two primary ways. First, it extends existing digital transformation frameworks by demonstrating their relevance within non-banking financial services characterized by asset-based transactions. Second, it emphasizes the need for context-sensitive digital transformation strategies that consider organizational and operational diversity across financial service sectors. This synthesis provides a conceptual bridge between general digital transformation theory and the practical realities faced by traditional financial service institutions.

The findings also invite engagement with theoretical debates on digital mediation and platformization within financial service contexts. Digital transformation in gold pawn services represents more than a technical upgrade, it constitutes a reconfiguration of the mediating infrastructure through which institutional communication and service relationships are organized. Drawing on platform theory (van Dijck et al., 2018), the adoption of integrated digital systems can be understood as the platformization of financial service delivery, wherein algorithmic processes, digital interfaces, and data flows progressively replace traditional human-mediated interactions. This transition carries important implications for power relations, user agency, and communicative transparency within financial service ecosystems, underscoring the need to analyze digital transformation through a communication-aware theoretical lens.

3.11 Managerial implications for digital transformation implementation

The findings offer important managerial implications for organizations pursuing digital transformation in non-banking financial services. Managers should recognize that digital transformation extends beyond technology deployment and constitutes a strategic organizational change process. The results indicate that investments in digital platforms must be accompanied by adjustments in organizational structure, governance mechanisms, and workflow design to ensure effective utilization of digital systems. Without such alignment, technological investments risk becoming underutilized or misaligned with operational needs.

Second, the study highlights the importance of prioritizing back-end system integration in asset-based financial services. Unlike service models that rely primarily on digital interfaces, gold pawn services depend heavily on accurate data management, asset tracking, and transaction verification. Managers should therefore focus on strengthening data governance, system interoperability, and process standardization to support reliable decision-making and service delivery. This perspective is consistent with prior studies emphasizing the role of integrated information systems in achieving operational excellence within financial institutions (Dong et al., 2019; Verhoef et al., 2021).

Third, human and organizational dimensions emerge as key determinants of transformation success. The transition toward digitalized service models requires employees to adopt new competencies and adapt to changing work practices. Managers should invest in continuous training programs, digital literacy development, and change management initiatives to reduce resistance and enhance organizational readiness. As suggested by digital transformation literature, organizations that actively manage the human dimension of transformation are more likely to achieve sustainable outcomes (Warner & Wäger, 2019; Kane et al., 2019). Overall, these implications highlight the necessity of adopting a holistic approach that integrates technological, organizational, and human factors in digital transformation initiatives.

3.12 Theoretical implications for digital transformation research

The results of this research provide important theoretical contributions to digital transformation studies, particularly within the information systems domain. First, the findings reaffirm that digital transformation should be understood as a continuous organizational evolution rather than a one-time technological intervention. The interaction between digital platforms, organizational capabilities, and service-specific characteristics observed in this study supports prior arguments that digital transformation unfolds through continuous adaptation and learning (Vial, 2019; Verhoef et al., 2021).

Second, this study advances digital transformation theory by emphasizing the influence of service logic and asset-specific characteristics in determining transformation outcomes. Unlike service models that rely primarily on digital interfaces, gold pawn services involve physical assets and short-term credit mechanisms that impose additional constraints on digitalization. This finding suggests that existing digital transformation frameworks need to incorporate service-specific contingencies to better explain variation in transformation trajectories across financial service domains (Hanelt et al., 2021).

Finally, the findings contribute to information systems research by demonstrating how digital technologies act as generative resources that reshape organizational routines over time, while simultaneously requiring governance and control mechanisms to ensure reliability and trust. This dual role of digital technologies underscores the importance of balancing innovation and stability in traditional financial service institutions (Nambisan et al., 2017; Warner & Wäger, 2019).

4. Conclusions

This study finds that digital transformation in Pegadaian Indonesia's gold pawn services is enabled by integrated digital platforms and centralized information systems. These systems can improve operational efficiency, data accuracy, transparency, and coordination, showing that transformation depends on aligning technology with organizational capabilities rather than on technology adoption alone. Digitalization creates opportunities for faster service, more accessible service information, traceable transactions, and improved customer engagement. However, the physical valuation and management of gold collateral and short-term lending cycles require reliable data, transaction control, and accountability. Digital solutions therefore need to reflect the operational characteristics of asset-based financial services. The main barriers identified are legacy-system incompatibility, uneven digital skills, limited organizational readiness, and resistance to change. Managers should pair investment in interoperable systems and data governance with employee training, digital literacy initiatives, and structured change management. Such alignment can support service reliability and sustained improvements in customer experience.

The study extends digital-transformation discussions to a non-banking, asset-based financial context and shows why general frameworks need contextual adaptation. Because the analysis relies on secondary sources and a single case, the findings are context-specific. Future research should incorporate interviews or surveys, comparative case studies, and mixed methods to examine whether similar drivers and challenges emerge across other non-banking financial institutions.

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Author Contribution

Conceptualization, research design, analysis, and preparation of the original draft, D.T.; Interpretation, validation, and critical revision of the manuscript, D.T.P.H. and G.R. All authors reviewed and approved the final manuscript.

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Declaration of Generative AI Use

During the preparation of this manuscript, the authors used ChatGPT (OpenAI) to assist with language editing. The authors reviewed and revised the AI-assisted text and take full responsibility for the accuracy and integrity of the final manuscript. Generative AI was not used to collect or analyze research data or to generate the study's empirical findings.

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