

A Strategic Ecosystem Development Model For Digital Health Platforms: A Case Study Of Assist.Id.

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Abstract.

The digital transformation of Indonesia's healthcare sector has increased the demand for data integration and interoperability among healthcare information systems. Digital platforms play a critical role in facilitating collaboration between healthcare providers, regulators, and other stakeholders within the healthcare ecosystem. One such platform is Assist.id, which supports healthcare facility digitalization and integration with the national health platform, SATUSEHAT. However, the success of a digital platform depends not only on technological capabilities but also on its ability to develop and manage a sustainable ecosystem. This study aims to analyze the ecosystem structure of Assist.id, evaluate its strategic role in orchestrating ecosystem interactions, identify key challenges in ecosystem development, and propose a strategic ecosystem development model. This study employs a qualitative case study approach. Data were collected through semi-structured interviews with key stakeholders, including Assist.id executives, healthcare facility representatives, and officials from the Ministry of Health of the Republic of Indonesia. Data analysis was conducted using thematic analysis guided by the perspectives of the Resource-Based View (RBV), Dynamic Capabilities, and Platform Ecosystem theories. The findings reveal that the Assist.id ecosystem consists of multiple actors, including healthcare facilities, regulators, patients, infrastructure providers, and strategic partners. Assist.id acts as an ecosystem orchestrator by facilitating system integration, data exchange, and coordination among stakeholders. However, the ecosystem has not yet achieved strong network effects due to limited stakeholder interaction, integration complexity, and varying levels of digital readiness among healthcare facilities. Based on these findings, this study proposes a strategic ecosystem development model consisting of five interconnected components: actor layer, interaction layer, value exchange, orchestration mechanism, and growth driver. The model highlights that sustainable platform growth depends on effective ecosystem orchestration, stakeholder engagement, and the creation of network effects, rather than solely on technological advancement.

Keywords: Platform Ecosystem, Digital Health, Ecosystem Orchestration, Dynamic Capabilities and Network Effects.

I. INTRODUCTION

The healthcare sector is experiencing significant digital transformation driven by increasing demands for integrated, efficient, and data-driven healthcare services. Advances in information technology have enabled healthcare organizations to improve service quality, operational efficiency, and decision-making through digital health systems and data interoperability. In Indonesia, healthcare digitalization has been accelerated through the implementation of SATUSEHAT, a national health interoperability platform initiated by the Ministry of Health to facilitate standardized data exchange among healthcare stakeholders.

The implementation of national healthcare interoperability requires collaboration among multiple stakeholders, including healthcare facilities, regulators, insurance providers, technology vendors, infrastructure providers, and patients. Consequently, digital platforms have emerged as critical intermediaries that facilitate coordination, integration, and information exchange among these actors. Unlike traditional information systems, digital platforms create value through interactions among multiple participant groups and the development of ecosystem-based relationships [1].

In the Indonesian healthcare sector, Assist.id serves as a digital platform that supports healthcare facility digitalization and facilitates integration with national healthcare systems, including SATUSEHAT and BPJS Kesehatan. Through its platform services, Assist.id assists healthcare providers in meeting interoperability requirements while improving operational efficiency and regulatory compliance. As a result, Assist.id represents an important example of how digital platforms function within a broader healthcare ecosystem.

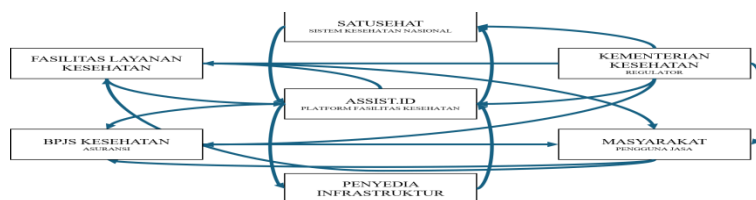


Fig 1. Digital Health Platform Ecosystem of Assist.id

Source : Data Processed by author

Figure 1 illustrates the ecosystem structure surrounding Assist.id as modelled by Ma [2], [3]. The platform acts as a central orchestrator connecting healthcare facilities, patients, regulators, BPJS Kesehatan, the national health platform (SATUSEHAT), and infrastructure providers. Through these interactions, data, services, information, and financial resources are exchanged among ecosystem participants.

Table 1. Actors and Roles within the Assist.id Ecosystem

Source : Data Processed by author

Ecosystem Actor	Role in the Ecosystem
Healthcare Facilities (Clinics)	Healthcare service providers and contributors of healthcare service data
Assist.id (Digital Platform Owner)	Technical intermediary and operational backbone for healthcare facilities
Ministry of Health (Regulator)	Policy maker, standards setter, and ecosystem orchestrator
Healthcare Financing Institutions (BPJS Kesehatan and Insurance Providers)	Healthcare financing and service verification institutions
National Health System	Manager and integrator of national healthcare data
Technology Infrastructure Providers	Providers of digital infrastructure and technical support
Patients	End users and beneficiaries of healthcare services

The increasing importance of digital platforms has attracted growing scholarly attention. Previous studies have primarily focused on technology adoption, user acceptance, electronic health record implementation, and health information system utilization [4], [5]. These studies have provided valuable insights into individual and organizational determinants of technology adoption. However, they offer limited understanding of how digital health platforms build, orchestrate, and sustain ecosystems involving multiple stakeholders.

From a strategic management perspective, platform success depends not only on technology adoption but also on the ability to mobilize resources, orchestrate interactions, and create network effects among ecosystem participants. The Resource-Based View (RBV) emphasizes the importance of valuable organizational resources in creating competitive advantage [6]. Dynamic Capabilities Theory highlights the ability of organizations to sense opportunities, seize them, and transform resources to adapt to changing environments [7]. Meanwhile, Platform Ecosystem Theory explains how platform owners create and capture value through ecosystem orchestration and network interactions [8].

Despite the growing literature on digital health technologies, several research gaps remain. Existing studies predominantly focus on technology adoption and implementation challenges rather than ecosystem

development and orchestration. Furthermore, limited research has integrated strategic management perspectives with platform ecosystem theory in the context of digital health platforms, particularly in emerging economies.

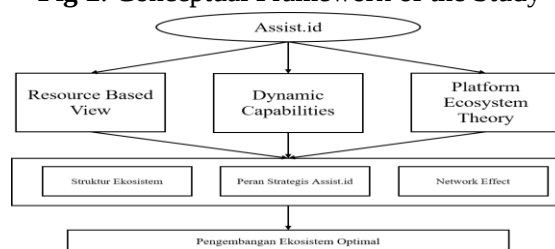
Table 2. Research Gap and Study Contribution

Previous Research Focus	Key Limitation	Contribution of This Study
Technology Acceptance	Focus on individual adoption behavior	Examines ecosystem-level interactions
Health Information System Implementation	Focus on implementation processes	Analyzes ecosystem development challenges
Platform Governance Studies	Limited healthcare context	Investigates digital health platform ecosystem
Ecosystem Research	Limited integration with strategic theories	Integrates RBV, Dynamic Capabilities, and Platform Ecosystem perspectives

To address these gaps, this study examines Assist.id as a digital health platform ecosystem. Specifically, the study aims to analyze the ecosystem structure of Assist.id, evaluate its strategic role in orchestrating interactions among ecosystem actors, identify key challenges influencing ecosystem development, and develop a strategic ecosystem model that supports sustainable platform growth and strengthens network effects.

The conceptual foundation of this study integrates Resource-Based View, Dynamic Capabilities, and Platform Ecosystem theories. Resource-Based View explains the strategic resources available to the platform, Dynamic Capabilities explain how these resources are developed and reconfigured, while Platform Ecosystem Theory explains how value is created through interactions among ecosystem actors. Together, these perspectives provide a comprehensive framework for understanding strategic ecosystem development in digital health platforms.

Fig 2. Conceptual Framework of the Study



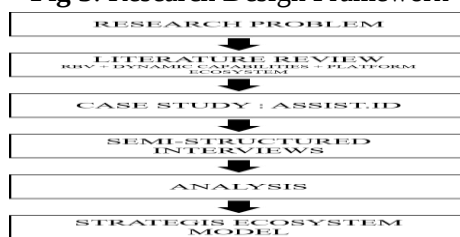
This study contributes to the literature by extending the understanding of digital health platforms beyond technology adoption and implementation. It proposes a strategic ecosystem perspective that highlights the importance of ecosystem orchestration, stakeholder interactions, and network effects in achieving sustainable platform growth. The findings are expected to provide practical implications for platform providers, healthcare organizations, and policymakers seeking to accelerate healthcare digital transformation in Indonesia.

II. METHODS

Research Design

This study employed a qualitative case study approach to explore the development of a digital health platform ecosystem in Indonesia. A case study was considered appropriate because the research aimed to investigate a contemporary phenomenon within its real-world context, where ecosystem actors, regulatory requirements, and technological interactions are highly interconnected [9].

Assist.id was selected as the focal case because it functions as a digital intermediary connecting healthcare facilities with national healthcare systems, including SATUSEHAT and BPJS Kesehatan. The platform provides a suitable context for examining ecosystem orchestration, stakeholder interactions, and strategic ecosystem development within the healthcare sector.

Fig 3. Research Design Framework

Data Collection

Primary data were collected through semi-structured interviews conducted with key stakeholders involved in the Assist.id ecosystem. The participants represented different perspectives within the ecosystem, including platform management, healthcare facilities, and healthcare regulators.

Interview questions were developed based on three theoretical perspectives: Resource-Based View (RBV), Dynamic Capabilities, and Platform Ecosystem Theory. The interviews focused on ecosystem structure, stakeholder interactions, resource utilization, orchestration mechanisms, challenges, and platform growth strategies.

Secondary data were obtained from company documents, regulatory publications, technical integration documents, and publicly available reports related to healthcare digitalization and interoperability initiatives in Indonesia.

Participants

Purposive sampling was employed to identify informants who possessed direct knowledge and experience regarding the operation and development of the Assist.id ecosystem.

Table 3. Research Informants

Informant Group	Role in Ecosystem	Purpose of Interview
Assist.id Management	Platform owner and ecosystem orchestrator	Platform strategy, ecosystem development, integration mechanisms
Healthcare Facilities	Platform users and healthcare service providers	Platform utilization, operational challenges, value creation
Ministry of Health Representatives	Regulators and standard setters	Regulatory requirements, interoperability standards, ecosystem governance

The study applied thematic analysis to identify recurring themes and patterns across interview data. The analysis followed the procedures of data reduction, data display, and conclusion drawing proposed by Miles, Huberman, and Saldaña [10].

A theory-driven coding approach was used, whereby interview data were categorized according to concepts derived from Resource-Based View, Dynamic Capabilities, and Platform Ecosystem Theory. This approach enabled the integration of empirical findings with strategic management and ecosystem perspectives.

Table 4. Theoretical Constructs and Analytical Dimensions

Theory	Analytical Dimension
Resource-Based View	Strategic resources, capabilities, partnerships, data assets
Dynamic Capabilities	Sensing, seizing, transforming
Platform Ecosystem	Actors, interactions, value exchange, orchestration, network effects

The analytical process consisted of four stages:

1. Data familiarization and transcription.
2. Initial coding of interview data.
3. Theme development and categorization.
4. Cross-case interpretation and model development.

Research Trustworthiness

To enhance credibility and trustworthiness, the study employed data triangulation by comparing information obtained from different stakeholder groups and documentary sources. Member checking was also conducted to ensure that interpretations accurately reflected participants' perspectives. Furthermore, theoretical triangulation was applied by interpreting findings through multiple theoretical lenses, namely RBV, Dynamic Capabilities, and Platform Ecosystem Theory.

III. RESULT AND DISCUSSION

Ecosystem Orchestration Mechanisms

The findings indicate that Assist.id performs a strategic role as an ecosystem orchestrator within Indonesia's digital health ecosystem. Rather than functioning solely as a technology provider, the platform coordinates interactions among healthcare facilities, government institutions, healthcare financing organizations, and national health information systems.

The analysis reveals that ecosystem orchestration is conducted through three primary mechanisms. First, Assist.id facilitates interoperability between healthcare facilities and national healthcare systems, particularly SATUSEHAT and BPJS Kesehatan. Second, the platform reduces technological complexity faced by healthcare facilities through integrated digital solutions and operational support. Third, Assist.id supports compliance with government regulations related to healthcare digitalization and data standardization.

These findings support the platform ecosystem perspective, which suggests that platform owners create value by coordinating interactions among ecosystem participants and enabling resource exchange across multiple stakeholder groups [8].

Strategic Resources and Dynamic Capabilities

From the Resource-Based View perspective, Assist.id possesses several strategic resources that support ecosystem development, including platform technology, interoperability capabilities, healthcare data integration expertise, regulatory knowledge, and relationships with key ecosystem stakeholders.

However, the findings suggest that sustainable advantage is generated not only through resource ownership but also through the organization's ability to continuously adapt and reconfigure these resources.

Analysis based on Dynamic Capabilities Theory identified three capability dimensions.

1. Sensing Capability

Assist.id demonstrates sensing capability by identifying emerging opportunities associated with healthcare digitalization policies and interoperability requirements. The company actively monitors regulatory developments and changing needs among healthcare facilities.

2. Seizing Capability

The platform responds to these opportunities by developing integration solutions that address operational and compliance challenges faced by healthcare facilities.

3. Transforming Capability

While sensing and seizing capabilities appear relatively strong, transforming capability remains less developed. The platform continues to rely primarily on integration-based services and has not yet fully expanded ecosystem-driven innovation mechanisms that could strengthen stakeholder engagement and network effects.

Challenges in Ecosystem Development

The study identified several challenges that limit ecosystem growth and hinder the development of stronger network effects.

The first challenge relates to differences in digital readiness among healthcare facilities. Smaller healthcare providers often face limitations in technological infrastructure and human resource capabilities, which affect adoption and integration processes.

The second challenge concerns interoperability complexity. Despite regulatory support, technical integration remains difficult due to variations in system architecture, data standards, and implementation readiness.

The third challenge involves ecosystem participation. Most interactions remain compliance-driven rather than value-driven, reducing opportunities for voluntary collaboration and innovation among ecosystem actors.

Table 5. Major Challenges in Ecosystem Development

Challenge Category	Key Findings
Digital Readiness	Uneven levels of digital maturity among healthcare facilities
Technical Integration	Complexity of interoperability implementation
Regulatory Adaptation	Continuous adjustment to evolving standards
Stakeholder Participation	Limited ecosystem engagement beyond compliance requirements
Network Effects	Weak interaction intensity among ecosystem actors

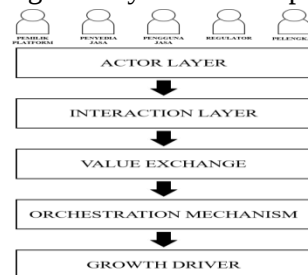
Strategic Ecosystem Development Model

Based on the empirical findings and theoretical analysis, this study proposes a Strategic Ecosystem Development Model for digital health platforms.

The model integrates Resource-Based View, Dynamic Capabilities, and Platform Ecosystem perspectives. It suggests that sustainable ecosystem growth is achieved through the interaction of five interconnected components.

The first component is the **Actor Layer**, which consists of healthcare facilities, regulators, financing institutions, infrastructure providers, patients, and the platform owner. The second component is the **Interaction Layer**, where exchanges of data, services, information, and financial resources occur. The third component is **Value Exchange**, which generates operational, regulatory, and strategic benefits for ecosystem participants. The fourth component is the **Orchestration Mechanism**, through which the platform coordinates interactions and ensures interoperability. Finally, the fifth component is the **Growth Driver**, represented by network effects that emerge from increasing participation and interaction within the ecosystem.

Fig 4. Strategic Ecosystem Development Model



The model extends existing literature by demonstrating that the success of digital health platforms depends not only on technological capabilities but also on ecosystem orchestration and the development of network effects.

Theoretical and Managerial Implications

The study contributes to the literature by integrating Resource-Based View, Dynamic Capabilities, and Platform Ecosystem Theory into a unified framework for analyzing digital health platform ecosystems. While previous studies have primarily focused on technology adoption and implementation, this research emphasizes ecosystem orchestration as a critical determinant of platform growth.

From a managerial perspective, platform providers should prioritize ecosystem development strategies alongside technology enhancement. Specifically, organizations should strengthen stakeholder engagement mechanisms, expand API-based integrations, develop incentive structures that encourage participation, and facilitate greater interaction among ecosystem actors to generate stronger network effects.

IV. CONCLUSION

This study examined the development of the Assist.id digital health platform ecosystem within the context of healthcare digitalization in Indonesia. Drawing on the Resource-Based View (RBV), Dynamic Capabilities, and Platform Ecosystem perspectives, the study analyzed ecosystem structure, orchestration mechanisms, strategic resources, and ecosystem development challenges. The key conclusions of the study are summarized as follows:

1. The Assist.id ecosystem consists of multiple stakeholders, including healthcare facilities, the Ministry of Health, BPJS Kesehatan, the National Health System (SATUSEHAT), infrastructure providers, and patients, with Assist.id serving as the ecosystem orchestrator.
2. Assist.id creates value by facilitating interoperability, stakeholder coordination, and regulatory compliance, enabling healthcare facilities to participate in Indonesia's healthcare digitalization initiatives.
3. The platform's strategic resources include integration capabilities, technological infrastructure, healthcare data management expertise, and relationships with key ecosystem stakeholders.
4. Dynamic capabilities are demonstrated through sensing healthcare digitalization opportunities, seizing market and regulatory demands, and transforming resources to support ecosystem development.
5. The ecosystem faces several challenges, including uneven digital readiness among healthcare facilities, interoperability complexity, limited stakeholder engagement, and weak network effects.
6. This study proposes a Strategic Ecosystem Development Model comprising five interconnected components: Actor Layer, Interaction Layer, Value Exchange, Orchestration Mechanism, and Growth Driver.
7. The findings suggest that sustainable digital health platform growth depends not only on technological capabilities but also on effective ecosystem orchestration and the development of network effects.
8. The study contributes to the literature by integrating Resource-Based View, Dynamic Capabilities, and Platform Ecosystem perspectives into a unified framework for analyzing digital health platform ecosystems.
9. Future research should examine multiple digital health platforms and quantitatively assess the relationships between ecosystem orchestration, stakeholder participation, and network effects.

V. ACKNOWLEDGMENTS

The authors would like to express their sincere gratitude to Assist.id, the participating healthcare facilities, and the representatives of the Ministry of Health of the Republic of Indonesia for their valuable insights and contributions to this study. The authors also acknowledge the support and guidance provided throughout the research process, which made this study possible.

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