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SUSTAINABLE STARTUPS: THE GAME CHANGING ROLE OF ENTERPRISE RESOURCE PLANNING

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A R T I C L E I N F O

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Abstract.. In the rapidly evolving landscape of Industry 4.0, startup companies are fostering innovation, attracting investment, and creating job opportunities, thus pivotal to economic growth. Despite their potential, the success rate of Indonesian startups achieving unicorn or decacorn status remains low. Many Indonesian startups face significant challenges such as limited access to funding, market competition, and operational inefficiencies, leading to high rates of closure and bankruptcy. Addressing these issues is crucial, to ensure that Indonesian startups in achieving significant growth and investment success, innovative solutions are essential. This study explores the implementation of Enterprise Resource Planning (ERP) systems as a strategic approach to enhance the sustainability and competitive edge of startups. Through a systematic literature review, founder/manager interviews and expert interviews, the research identifies ERP as a crucial tool for integrating business processes, improving operational efficiency, and enabling data-driven decision-making.

Abstrak. Dalam lanskap Industri 4.0 yang berkembang pesat, perusahaan rintisan mendorong inovasi, menarik investasi, dan menciptakan lapangan kerja, sehingga penting bagi pertumbuhan ekonomi. Meskipun berpotensi, tingkat keberhasilan perusahaan rintisan Indonesia mencapai status unicorn atau decacorn masih rendah. Banyak perusahaan rintisan Indonesia menghadapi tantangan signifikan seperti akses terbatas ke pendanaan, persaingan pasar, dan inefisiensi operasional, yang menyebabkan tingginya tingkat penutupan dan kebangkrutan. Mengatasi masalah ini sangat penting, untuk memastikan bahwa perusahaan rintisan Indonesia mencapai pertumbuhan yang signifikan dan keberhasilan investasi, solusi inovatif sangat penting. Studi ini mengeksplorasi implementasi sistem Enterprise Resource Planning (ERP) sebagai pendekatan strategis untuk meningkatkan keberlanjutan dan keunggulan kompetitif perusahaan rintisan. Melalui tinjauan literatur sistematis, wawancara pendiri/manajer, dan wawancara ahli, penelitian ini mengidentifikasi ERP sebagai alat penting untuk mengintegrasikan proses bisnis, meningkatkan efisiensi operasional, dan memungkinkan pengambilan keputusan berbasis data.

INTRODUCTION

Startup companies have emerged as a new business model that has played a crucial role in the digital economy over the past two decades (Asnawi, 2022). The startup business trend highlights the spirit of digital entrepreneurship and represents an agile business model for competing in the context of Industry 4.0 (Bouncken et al., 2021). Startup firms operate with simplified structures and bureaucracies, typically comprising smaller teams compared to traditional companies. In their operations, the focus of these firms is on business growth rather than structural organizational improvements (Faulks et al., 2021).

Prior to the pandemic, startups contributed approximately 15% to the creation of new job opportunities, earning them the moniker "the engine of economic growth" (Akcigit et al., 2018). Startups are integral to the creative industry, contributing 11%—or approximately USD 130 billion—to Indonesia's Gross Domestic Product in 2020 (Kominfo, 2020). It is anticipated that the startup model will not only endure but also stimulate economic growth during the waves of global recession, particularly in light of the prolonged pandemic. Key factors for the sustainability of startup businesses include innovative products and services, a culture of continuous innovation, and a supportive ecosystem (Díaz-Santamaría et al., 2021).

Currently, Indonesia ranks sixth worldwide with 2,533 startups (Annur, 2023; Ranking, 2023). Several Indonesian startups have successfully increased their valuations, achieving "Unicorn" and even "Decacorn" status, including Tokopedia, Traveloka, Bukalapak, and Gojek, among others. Companies that demonstrate strong valuation growth have a high probability of attracting funding from investors. Generally, the success of a startup can be assessed through various aspects, including customer type, product or service offerings, team composition, financial health, and the chosen business model (Dessyana et al., 2017). However, the number of Unicorn and Decacorn startups in Indonesia remains limited, falling significantly behind Singapore, which does not even rank in the top 20 for the highest number of startups globally.

Research indicates a high failure rate of 90% in the development processes of startup companies (Aminova, 2021). Numerous factors contribute to this failure, including insufficient funding from investors, lack of financial resources for company development, low consumer interest in the offered products or services, miscalculations in costs and financial planning, and deficiencies in quality, creativity, collaboration, and team experience, among others (Bednár, 2017). Ensuring the success of startups in a competitive environment is not easily quantifiable and lacks guaranteed outcomes. To sustain operations and maintain company valuation, startups must take appropriate steps in their business processes. Strategic decisions made by founders and management should be grounded in comprehensive and up-to-date information and data.

An integrated company system is essential to clearly map and visualize all business processes. With an integrated system, operations become more efficient, enabling better-calculated

operational costs. A centralized data system will provide companies with an accurate, real-time overview of their conditions. Additionally, tracked business performance is a key consideration for funding companies prior to investment decisions. One recommended solution from researchers is the implementation of Enterprise Resource Planning (ERP) (Rahardja, 2023; Crespo-Martínez, 2022; Terminanto, 2019a).

The importance of ERP implementation for the competitiveness and resilience of small and medium-sized enterprises (SMEs) in several countries has made it a prerequisite for business licensing and even a requirement for companies seeking government funding or subsidies (Jayeola et al., 2022). While recommending that startup companies implement ERP systems does not guarantee the prevention of failure, the success of a startup is a combination of various factors. However, implementing ERP can provide several advantages, including an integrated system that enables decision-making based on current data about the company's status, thereby answering the critical question: "What is our current situation?" (Razzaq, 2020).

This study conducts an analysis of ERP needs within startup companies, based on insights from founders/managers of existing businesses and interviews with ERP experts from both academia and practice. The results of this research are expected to serve as a reference for startup companies in the installation of applications, potentially supporting their efforts to sustain business continuity.

LITERATURE REVIEW

1.1 Startup Companies

Startup companies, or widely recognized as startups, are defined as temporary organizations designed with measurable business models, typically operating in the field of technological innovation, with limited operational areas and a workforce ranging from 50 to 140 employees (Montani, 2020; Bonaventura et al., 2020). Unlike traditional businesses, startups rely on external funding, necessitating a clear valuation or scalable metrics at each stage of their life cycle for the industrialization or reproduction of their products or services (Cockayne, 2019).

In Indonesia, 2009 marked the establishment of the country's first startups, namely Tokopedia, Gojek, and Bukalapak, followed by Traveloka in 2012. By 2016, Gojek (now Goto) became Indonesia's first Unicorn, followed by Tokopedia and Traveloka. Goto also emerged as the first Indonesian startup to attain Decacorn status. As of 2023, Indonesia ranks among the countries with the highest number of startups, exceeding 2,500 companies. The development of startups in Indonesia has paralleled the revolution in cellular networks, the increasing use of social media, heightened interest and support from investors and the government, as well as the attractive products being offered. Indonesian startups represent promising investment opportunities for foreign investors and are expected to drive the Indonesian economy in the post-pandemic era (Syavitra, 2022).

However, relatively few Indonesian startups evolve into unicorns or decacorns. The failure rate among Indonesian startups is nearly 90%, with the number of companies achieving unicorn status amounting to less than 0.1%. Several reasons contribute to the failure of startup companies (often multiple factors are involved), including insufficient funding for company development, with a lack of investor support cited by 50% of respondents, low consumer interest in the offered products or services (28%), miscalculations in costs and financial planning (16%), and deficiencies in quality, creativity, collaboration, and team experience (14%) (Bednár, 2021). Further studies indicate that failure is often due to mismanagement, errors in strategic decision-making, cost miscalculations, and incompetence among team members, which can have fatal consequences for startups (Öndas, 2021).

Startups are characterized by non-conventional business models and the potential for exponential growth (Winasis, 2023). Therefore, strategic management decisions require careful consideration. For example, decisions regarding whether to continue with existing products (based on sales data and market preferences), whether to invest in marketing efforts (based on accounting data), whether there are deficiencies in inventory processes (based on inventory data), whether there is overstaffing (based on human resource data), and whether investments or innovations in other areas are necessary (based on accounting data). In this context, founders and management need accurate, real-time operational data. To obtain comprehensive data, appropriate software is necessary to ensure that all data across organizational units are connected and integrated. One of the research recommendations is for startup companies to implement Enterprise Resource Planning (ERP) systems. This aims to enable founders and management to understand the current condition of the company, facilitating early detection and timely mitigation of issues (Winasis, 2023; Irfan, 2023; Wijaya, 2019).

1.2. Enterprise Resource Planning

Enterprise Resource Planning (ERP) consists of modules based on the functional units within a company. These modules may include sub-modules, depending on the specific needs of the organization. In the case of major vendors such as SAP and Oracle, the modules are fixed and packaged, and their development requires access from the originating vendor. Conversely, for open-source vendors, modules can be installed independently and tailored to the company's requirements.

By implementing ERP, companies can facilitate communication between departments, reduce operational costs and time, enhance data transparency, and ultimately expedite and improve the accuracy of decision-making processes. From an accounting perspective, ERP implementation ensures the quality of reports is maintained, as the integration of the chart of accounts reporting occurs in real-time, leading to more accurate financial analysis (Ladista, 2022). Additionally, ERP systems help maintain data validity as they ensure data transparency and prevent duplication (Kim, 2021). Furthermore, interdepartmental communication becomes more centralized, allowing overall operational processes to function more effectively and efficiently (Prabowo, 2022).

Typically, ERP systems are characterized by their integration capabilities, real-time data operation, a single database that supports all units and conditions, and uniform interfaces across different functional modules (Hnedina et al., 2020). Currently, cloud-based ERP systems are gaining

traction in the industry, as they facilitate data access from any location at any time (Akyurt et al., 2020). In large organizations, the implementation of ERP is a lengthy, complex process that requires significant financial investment and, in some cases, may have a low success rate (Terminanto et al., 2019a). The greater the operational complexity of the company, the more intricate the software required for the ERP system. Concerns regarding potential failure often lead companies to opt for established ERP vendors, resulting in a condition known as vendor lock-in, where organizations become heavily reliant on these vendors. Small and Medium-sized Enterprises (SMEs) typically have simpler operational structures with lower levels of complexity, making the initial implementation of an ERP system more cost-effective. As the company grows and requires a more complex ERP system, upgrades can be performed easily because all functional units are already interconnected within an integrated system (Terminanto et al., 2017).
Failures and setbacks experienced by some startup companies can often be attributed to inefficient operational systems and low productivity among human resources, which may ultimately lead to a decline in the quality of the products or services offered. In this context, an ERP system serves as a solution for streamlining business processes and unlocking further growth opportunities (Flanding et al., 2022).

1.3 ERP Implementation for Indonesian Startup Company

The implementation of ERP systems is often perceived as non-essential during the process of building a startup. Many founders consider it a waste of funds, resources, and time. However, they need to recognize that startups are designed with the expectation of achieving high valuations and potentially expanding internationally. To remain agile amid uncertainty, it is crucial for management to have a system that integrates all processes and operations within the company (Casanova et al., 2019; Patel, 2021; Miceli, 2021; Zielske et al., 2022). The adoption of ERP systems also adds value for both prospective and existing investors, as it enables monitoring through the transparency of data generated by the ERP system (Cagarman et al., 2020).
Initially, the implementation of ERP in startups was not recommended due to economic considerations (Patel, 2021), the likelihood of failure (Molina-Castillo et al., 2022), resource availability (Kenge, 2020), and doubts regarding technological adaptation readiness (Katuu, 2021). However, changes in market dynamics, industry environments, and investor demands have made ERP implementation a critical consideration for startups. Currently, the high costs associated with system implementation can be mitigated through cloud computing technologies and the selection of open-source ERP solutions (Katuu, 2021). Early implementation of ERP, when the company's complexity is still low, is also recommended to provide a competitive advantage in an uncertain business landscape (Alsharari, 2021; Menon, 2019).
The process of implementing ERP in existing companies is not straightforward, as it involves migrating existing data and processes to a new platform, a complex step that requires time to ensure accurate migration (Coşkun et al., 2022). Another critical issue is cost; implementing ERP can be prohibitively expensive, especially when utilizing proprietary vendors like SAP, Oracle, or Axapta. This necessitates careful planning, financial preparation, and management support (Salih et al., 2021). Compatibility issues also pose a risk, as implementation can fail if there is a misalignment between the company's operational processes and the ERP module conversions (Coşkun et al., 2022).

Implementing ERP at the early stages of a company's growth correlates with a higher success rate, which is linked to business process reengineering, where the complexity of the organization

determines the difficulty of successful implementation (Kouriati, 2022). Cost solutions include selecting open-source vendors such as Odoo, Open Bravo, ERPNext, and Adempiere, as well as adopting cloud-based systems (Terminanto, 2019b). Startups in their formative stages typically have fewer units and departments compared to conventional companies, allowing for the selection of ERP modules that align with their operations. These initial modules can be bundled in a basic form, enabling implementation across other startups and shortening the implementation timeline. Early ERP adoption is expected to address challenges faced by startups throughout their business cycles, assist in strategic decision-making, enhance company management, and facilitate financial and cost planning. In the long term, it is anticipated to improve employee performance by enabling tasks to be completed more quickly and accurately (Handoko, 2020).

RESEARCH METHODOLOGY

This study employs an inductive qualitative research method. Primary data collection for this qualitative research was conducted through semi-structured interviews with informants. Secondary data were gathered from various literature sources, including books, reports, journals, and other relevant materials.

The subjects of the research were informants who are directly involved, knowledgeable, and capable of providing in-depth information regarding the research topic. The study aimed to understand the comparative conditions of startup companies that have implemented ERP systems versus those that have not. The subjects were selected through purposive sampling, specifically founders or managers of startup companies in Indonesia. Interviews were conducted with four founders/managers of startups that have yet to implement ERP and three founders/managers of companies that have already implemented ERP. The collected data were subsequently processed for analysis alongside expert interviews.

In the next phase, consultations were held with experts. These experts were asked for their opinions on the urgency of ERP implementation in startup companies. The criteria for selecting experts included having academic knowledge in the field of Enterprise Resource Planning (ERP) and possessing experience in successfully implementing ERP systems within organizations or companies. In this study, data validity was tested using source triangulation, followed by theoretical triangulation methods.

RESULT AND DISCUSSION

This study utilizes interview data from informants at seven startup companies in Indonesia, 2 of them (Dana and Blbli.com) are unicorn startups. All seven companies, 4 of them have not yet implemented ERP (Enterprise Resource Planning) systems. The purpose of these interviews is to understand the operational challenges they face and their perspectives on ERP implementation.

Table 1 Research Respondent

Respondent	Company Name	Year Est	Industry	ERP Status	Position
Respondent 1	DANA Indonesia	2017	Fintech	Implemented	Head of Infrastructure Data Center
Respondent 2	Blibli.com	2009	E-commerce	Implemented	Senior Manager
Respondent 3	PT DKE	2013	Dermatology	Implemented	Manager
Respondent 4	GuruInovatif	2020	Education	Not Yet Implemented	Chief of Technology Officer
Respondent 5	Aktiv	2020	Health Telemonitoring	Not Yet Implemented	Chief of Marketing Officer
Respondent 6	Mandorku	2023	Construction	Not Yet Implemented	Managing Director/Founder
Respondent 7	PT KEM Indonesia	2018	Consultant & Educational Training	Not Yet Implemented	Training Manager/Founder

The implementation of Enterprise Resource Planning (ERP) is a strategic approach increasingly adopted by startups to enhance operational efficiency, optimize daily staffing, and position the company for long-term growth. Insights from startups that have implemented ERP provide a clearer understanding of the processes, challenges, and benefits associated with this implementation. For instance, PT DKE has begun implementing ERP with a focus on integrating all key departments, including finance, human resources, procurement, sales, and inventory. The manager of PT DKE, Respondent 3, explained that the implementation process took approximately six months. However, this process was not without obstacles; during in-depth interviews, Respondent 2 from Blibli highlighted challenges such as workforce resistance to change, particularly among employees accustomed to manual systems, and the need for intensive training to ensure that all employees could effectively use the ERP system. Nevertheless, the benefits gained post-implementation were substantial. Respondent 1 noted that the process involved all departments, including sales, finance, HR, procurement, and customer relationship management. One of the main challenges faced by DANA Indonesia was ensuring that the ERP system could handle large and complex data volumes. Additionally, employee training became a primary focus to ensure that each user could effectively utilize the system.

Senior Manager from Blibli.com (Respondent 2) successfully implemented ERP within six months. Currently, nearly all departments, including finance, HR, procurement, sales, inventory, and supply chain management, are connected through the ERP system. A key focus during implementation at Blibli.com was the integration of the ERP system with pre-existing systems.

Data migration posed one of the biggest challenges; however, thanks to meticulous planning and execution, Blibli.com completed its implementation successfully.

Respondent 3 emphasized the necessity of intensive training to ensure that every employee could effectively use the ERP system. Businesses operating without an ERP system, relying instead on manual procedures, face risks of errors and inefficiencies. For example, the lack of an integrated system, as noted by Respondent 4 from GuruInovatif, complicates coordination among work units. Consequently, decision-making is delayed, and errors in data transmission can occur. The reliance on manual processes also increases operational costs due to the additional labor and time required for routine operations. According to Respondent 5 from Aktiv, a company that has yet to implement ERP, challenges arise in obtaining timely and accurate financial reports and project status updates, often hindering strategic planning and decision-making. Respondent 6 from Mandorku faced significant decision-making challenges due to a lack of access to integrated, real-time data, leading to slow responses to market changes. Respondent 7 from PT KEM Indonesia stated that data collection is a major obstacle in the report preparation process, as all operations are still conducted manually. Respondent 4 from GuruInovatif experienced difficulties in effectively monitoring inventory, resulting in waste and inaccuracies in financial reporting.

The following is a comparative analysis between startup companies that have implemented ERP and those that have not. This analysis covers aspects such as operational efficiency, data management, decision-making, and the challenges faced, based on the key findings from these interviews.

Tabel 2 Comparison of Research Aspects Between Companies That Have and Have Not Implemented ERP

Aspect	Startup Companies That Have Implemented ERP	Sartup Companies That Have Not Implemented ERP
Process Automation	Business processes are automated, reducing operational time and costs	Still rely on manual processes, leading to inefficiencies and higher costs
Decision Making	Real-time and accurate data aid in strategic decision-making	Data is scattered across departments, causing delays and inaccuracies in decision-making
Operational Efficiency	Improved operational efficiency and reduced material waste	Limitations in inventory management and operational efficiency
Profit Increase	Profits have increased due to automation and efficiency	No significant increase in profits due to operational issues
Challenges Faced	Resistance to change and the need for training to adapt to the ERP system	Budget constraints and the perception that ERP is more suitable for larger companies

Technology Needs	ERP provides centralized data access, facilitating interdepartmental integration	No centralized system, complicating coordination among work units

3.1 Challenges and Obstacles to Implementation

Implementing ERP systems often faces complex technological challenges, such as data migration, system integration, and the adaptation of business processes, which require careful handling. Respondent 2 from Blibli.com emphasized the importance of integrating the ERP system with existing systems, which necessitates strong dedication and support from all involved parties. Respondent 1 from DANA Indonesia underscored that having a competent IT team is crucial to ensure the success of ERP implementation. Respondent 3 from PT DKE noted that the success of ERP implementation heavily relies on the dedication of the management team and the establishment of realistic expectations throughout the organization. With this approach, companies can optimize change management and ensure that ERP implementation proceeds smoothly, providing significant added value to their business.

ERP implementation can also be sensitive to cultural differences, particularly in companies with a strong and established work culture. Respondent 2 from Blibli.com highlighted the importance of involving employees in the implementation process to address cultural differences, ensuring that employees not only understand the value of ERP but also feel comfortable with the impending changes. Respondent 1 from DANA Indonesia emphasized that effective communication is key to overcoming cultural differences. By ensuring that employees grasp the value of ERP and are comfortable with these changes, companies can reduce resistance and enhance the overall success of ERP implementation.

One reason for delays in ERP implementation at the respondent companies is the substantial costs associated with it. In a separate discussion, Respondent 4 noted that the costs understood by their company include licensing fees, infrastructure, and implementation. In initial meetings with the ERP vendor, the total proposed costs exceeded the budget allocated by the company. The necessary infrastructure costs stem from the need for software upgrades if the ERP is implemented on-premise. Additionally, customization costs are incurred, given that the company is considered a specific startup with pre-existing computing systems.

Based on a study involving three startup companies that have successfully implemented ERP systems and four companies that have not, several key findings can be identified. One of the primary benefits of ERP implementation is the automation of various business processes that were previously conducted manually. Respondent 2 stated that the implementation of ERP is an effort to reduce costs at Blibli. Informants in the study also noted that ERP positively impacts business cash flow. Both respondents from DANA Indonesia and PT DKE reported increases in revenue and profitability after adopting ERP, as a consequence of operational efficiencies. The three informants from the startups that have implemented ERP suggested that other startups should adopt ERP and emphasized the need for timely installation to integrate it into daily operations.

Based on the research findings, it can be concluded that the implementation of ERP has a significant impact on operational efficiency, aligning with previous studies (Faizan & Mehmood, 2022; Harun et al., 2022; Mallieswari et al., 2022), including reductions in material waste, increased margins and profits, as well as accelerated business processes (Zaitar, 2022). Each respondent agreed that ERP must be implemented correctly from the outset to maximize its

benefits. All of this provides a strong foundation for startup companies to carefully consider ERP implementation as a strategic approach to support their growth and business operations.
Among the four informants from companies that have not yet implemented ERP, they expressed that their organizations do not currently have strategic decisions in place to adopt ERP in the near future. One of the primary reasons is the perceived high costs of implementation, which are considered beyond their expenditure plans. Additionally, new businesses feel they do not yet need ERP, as they perceive it to be more suitable for larger organizations. Despite these funding issues and the complexities of preparation levels, the majority of informants indicated an interest in implementing ERP in their businesses.
To validate the research findings, interviews were conducted with ERP experts. Two experts were involved as informants: one was an academic specializing in ERP research (P1), and the other was a practitioner with ERP experience (P2). Below are the responses provided by the experts regarding the implementation of ERP in startup companies.

Tabel 3 Expert Interview Result

Aspect	Expert Interview Result
Reasons for ERP Implementation	P1: The integration of Enterprise Resource Planning (ERP) systems is deemed crucial for companies as it facilitates the consolidation of various operational functions, thereby enabling swift and accurate decision-making. P2: ERP systems enhance efficiency by centralizing functions such as accounting, inventory management, human resources, and production, which reduces data duplication and increases operational transparency.
Limitations Based on Company Size	P1: There are no size limitations in ERP implementation for large corporations, SMEs (Small and Medium Enterprises), or micro, small, and medium enterprises (MSMEs). All types of companies can benefit from ERP; however, the required modules will depend on the size and complexity of the organization. P2: ERP can be implemented in large corporations, MSMEs, and SMEs without restrictions based on company size. Nonetheless, the scalability and complexity of ERP systems may vary. Larger companies typically require more complex modules and customization, while smaller companies might suffice with simpler ERP solutions.
Advantages of Using ERP	P1: The primary advantage for companies that implement ERP is the efficiency in data management, time savings, and improved integration among departments. P2: Advantages include: - Enhanced operational efficiency through automation. - Centralized data that facilitates real-time access and analysis.

	- Increased productivity due to more structured processes. - Reduced human error through automation. - Scalability that supports business growth without necessitating system changes.
Comparison of Implementation	P1: Smaller companies tend to have an advantage in this process because their business processes are not overly complex, allowing for quicker implementation. Conversely, larger companies may face greater challenges due to the complexity of their business processes. P2: ERP implementation in smaller companies is generally simpler and faster due to the smaller scope of business processes and fewer module requirements. In contrast, larger companies often necessitate deeper customization, complex inter-departmental integration, and longer implementation times.
ERP Needs for Startups	P1: Startups also require ERP to support their rapid operations, particularly in decision-making. P2: Yes, although it depends on the scale and complexity of the startup's operations. Rapidly growing startups, especially in technology, retail, or logistics, can derive significant benefits from ERP due to the necessity of integrating various business processes from an early stage.

Overall, the results from the expert interviews reinforce the conclusions drawn from previous respondent interviews. The adoption of ERP systems is crucial for startup companies, particularly those experiencing rapid growth and operational complexity. Early implementation can mitigate future challenges and enhance operational efficiency, thereby supporting sustainable business development.

CONCLUSION

The objective of this research is to assess the implementation of ERP systems in startup companies in Indonesia. Based on interviews with founders of existing startup companies—both those that have implemented ERP and those that have not—it can be concluded that there are various operational challenges frequently encountered by companies during their growth phase. The solution of implementing ERP in existing startups can address several issues related to operational efficiency, decision-making processes, risk reduction, and error minimization, while also enhancing the likelihood of investor support and business transparency. Overall, ERP is an essential solution for startups to improve operations, support growth, and maintain competitiveness in a dynamic market. Implementing ERP from the outset, at the seed stage, assists startups in establishing a robust business foundation and preparing to face future challenges.

According to expert input, startups require ERP systems to support their operations, particularly in decision-making processes. By adopting ERP, companies gain advantages such as improved data management efficiency, time savings, better interdepartmental integration, and reduced human errors through automation. Centralized data access facilitates real-time analysis, promoting

increased productivity and scalability as the business grows. ERP implementation should ideally occur at the early stages of formation, specifically during the seed stage, when the company is still relatively simple. This approach helps prevent difficulties related to data migration and implementation issues in the future. The complexity and scale of the organization influence the necessary ERP modules; larger companies may require more complex and customized solutions, while smaller companies may suffice with simpler ERP systems.

LIMITATION

This study has several limitations, as it involves only a few startup companies in Indonesia. Although the findings provide valuable insights, caution should be exercised when generalizing these results to broader contexts. Future research could involve a larger number of companies from diverse sectors and regions to enhance the generalizability of the findings. Additionally, research could focus on startups within similar business lines to derive better trends and conclusions.

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