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Establishing Effective Processes in Information Systems

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ABSTRACT

In the era of increasingly developing digital transformation, information systems (IS) no longer function only as administrative tools, but have become strategic components in supporting the sustainability and competitive advantage of organizations. This study aims to evaluate strategic planning of information systems using the Ward and Peppard methodology approach that emphasizes the alignment between business strategy and IS strategy. A descriptive qualitative approach with case studies is used in this study, with data collection through documentation studies and literature reviews. The analysis was carried out using various techniques, including SWOT, Value Chain, Critical Success Factors (CSF), Balanced Scorecard, McFarlan's Strategic Grid, and PEST. The results of the study indicate that the success of IS implementation is greatly influenced by a deep understanding of the organization's strategic needs and the use of appropriate methodologies to identify relevant IS applications. Ward and Peppard's methodology is able to provide a systematic framework for integrating information technology into business processes as a whole. Thus, IS strategic planning not only improves operational efficiency but also plays an important role in supporting the right decision making and the development of the organization's adaptive capabilities in facing the dynamics of the external environment. These findings provide an important basis for organizations in determining IT strategies that are aligned with long-term goals.
Keywords: Strategic Planning; Information Systems; Ward and Peppard

INTRODUCTION

In the era of rapidly developing digital transformation, information systems (IS) have become one of the vital components in supporting organizational operations and strategies. The use of information technology is no longer just an administrative tool, but has become an integral part of strategic planning and decision making. Therefore, understanding the purpose, implementation, and impact of information systems is crucial for organizations that want to remain competitive and adaptive to the dynamics of the business environment.

According to Ward and Peppard (2002) in Wedhasmara's quote (2009), there are three main targets in implementing information systems in organizations. First, information systems play a role in increasing operational efficiency by automating various business processes related to data management.and information. This automation can speed up the workflow, reduce operational costs, and minimize

human error in administrative processes. Second, information systems can improve management effectiveness by providing relevant, accurate, and timely information. This is very important in the decision-making process, because management needs a strong information base to formulate organizational policies and strategies. Third, information systems can be used as a tool to strengthen organizational competitiveness, through innovation in business models, improving customer service, and creating added value through technology integration into core business processes.

However, in practice, many organizations fail to gain maximum benefits from the implementation of information systems. One of the main causes is the tendency of organizations to focus too much on the technological aspect alone, without considering the alignment between information systems and the needs and strategic direction of the organization. Earl (1992) emphasized that an effective approach to utilizing information systems strategically is to rethink business or review existing business processes. This process involves an in-depth analysis of the actual problems faced by the organization, the influence of changes in the external environment, and identification of innovation opportunities. In this context, information technology should not stand alone, but rather be part of a comprehensive solution that supports overall business transformation.

Therefore, adequate knowledge and a holistic approach are needed in determining the strategy for implementing information systems. Organizations need to understand that the success of an information system is not only determined by the sophistication of its technology, but also by the extent to which the system is aligned with the vision, mission, and long-term goals of the organization. This process includes identifying specific information needs, evaluating the readiness of infrastructure and human resources, and developing an organizational culture that supports technology-based change. With a strategic and integrated approach, the implementation of information systems will not only improve operational efficiency, but also strengthen the organization's capabilities in facing future business challenges.

METHOD

The research method used in this study is a descriptive qualitative approach with a case study as the main strategy. The focus of the research is directed at strategic planning of information systems (IS) based on the Ward and Peppard methodology which emphasizes the importance of alignment between business strategy and IS strategy of the organization. Data were collected through documentation studies and literature reviews, and analyzed using various strategic analysis techniques such as SWOT analysis, Five Forces, Value Chain, Critical Success Factors (CSF), Balanced Scorecard, McFarlan's Strategic Grid, and PEST. The analysis procedure is carried out through the stages of identifying the internal and external environment of the business and the organization's information system, followed by the preparation of IS strategy, IT strategy, and IS management strategy. The ultimate goal of this method is to prepare strategic IS planning that is able to provide optimal contribution to achieving organizational goals and support effective and efficient decision-making processes through the use of information technology.

DISCUSSION

Information system strategy is an important foundation in managing information technology that is oriented towards organizational goals. This strategy not only answers questions about what applications should be used by the organization, but also explains how these applications can support the effectiveness of information flow, communication between management levels, and acceleration of decision-making. Nur Arifani & Darmawan (2016) and Wedhasmara (2009) state that information system strategy should ideally be able to create efficiency, accuracy, and relevance in delivering organizational information, including encouraging the strengthening of the role of upper management. For example, by implementing an Executive Information System in marketing, the vertical flow of information becomes more open, transparent, and no longer centralized at one level of management. This is in line with the theory of information hierarchy in strategic management, which states that balanced access to information between organizational levels can increase adaptability and decision-making capabilities (Laudon & Laudon, 2020).

To build an effective information system strategy, alignment between IS strategy and business strategy is a key element that cannot be ignored. In IT strategic management literature, this is known as the concept of strategic alignment or business-IT alignment, namely the harmonious integration of business needs with the use of information technology. Apriyansyah et al. (2018) and Wayan Widi Karsana et al. (2019) emphasize that understanding the direction and goals of the organization as a whole—including values, culture, structure, and policy direction—is an absolute prerequisite in developing an IS strategy. Without this understanding, organizations tend to adopt technology reactively, not strategically, which risks wasting resources and creating a system that is not optimal in the long term.

Strategic planning of information systems is a continuation process of determining strategy, which is more technical in identifying application portfolios and development priorities. Ward & Peppard (2002) explained that this planning not only acts as a technical planning tool, but also as a management instrument that connects business processes, resources, and the organization's long-term vision. Septiana (2017) and Setya Wardhana & Tanaamah (2019) added that the IS/IT strategic planning process also includes identifying the influence of information systems on organizational performance, as well as their potential contribution in supporting the achievement of strategic goals. This shows that IS strategy not only functions as administrative support, but also as a driver of organizational transformation towards better competitiveness.

To minimize the risk of failure, the IS strategic planning process must be based on a systematic methodology, as suggested by Wedhasmara (2009). In this case, the Ward and Peppard methodology is one of the comprehensive frameworks, because it not only identifies technology needs, but also considers the internal and external dimensions of the organization. This process begins with the input stage, including analysis of the internal business environment (business strategy, culture, processes), external business environment (industry, competition, economy), internal IS analysis (current application conditions, infrastructure, skills), and external IS (technology trends, competitors). The results of this analysis become the basis for the output stage, namely the formulation of business IS strategies, IT strategies, and IS management strategies that are directed and measurable.

In order for this methodology to run effectively, appropriate analysis techniques are also needed in each stage. The SWOT analysis technique is a basic tool used to map

the strengths, weaknesses, opportunities, and threats of an organization based on internal and external data. By knowing the strengths and opportunities, organizations can optimize the resources and technology they have to produce competitive advantages. Meanwhile, identifying weaknesses and threats helps organizations design appropriate risk mitigation strategies. This is important because strategies that do not consider SWOT factors risk adopting technology that is not relevant to the conditions of the organization.

In addition to SWOT, Michael Porter's Five Forces analysis is also used to understand the dynamics of industry competition as a whole. The five competitive forces analyzed, namely buyer bargaining power, supplier bargaining power, threat of new entrants, threat of substitute products, and rivalry between competitors, can be used as a basis for determining how information technology can be used to respond to market pressures. According to Porter (1985), organizations that are able to integrate their information systems into business strategies will have a greater opportunity to utilize technology as a competitive tool, both in product innovation, supply chain management, and customer service.

On the other hand, Value Chain analysis by Porter (1985) is a tool to map all organizational activities, starting from primary activities such as production, marketing, distribution, to supporting activities such as human resource development and IT infrastructure management. In the context of information systems, the value chain helps organizations to know at what stage technological intervention can increase efficiency and added value. The application of information systems to primary and supporting processes not only increases productivity, but also enables data-driven decision making.

Another analysis used in this methodology is Critical Success Factors (CSF), which helps organizations to determine key factors that determine success in achieving their goals. Wedhasmara (2009) explains that CSF is a bridge between business strategy and information systems, because it allows organizations to focus on strategic areas that require priority technology intervention. By identifying CSF, organizations can design information systems that truly provide significant contributions, not just operational complements.

The Balanced Scorecard method developed by Kaplan and Norton also provides an important contribution to IS strategic planning. The basic principle of this method is that the measurement of organizational performance should not only be based on finance, but also from the perspective of customers, internal business processes, and learning and growth. In the context of IS, the Balanced Scorecard can be used to evaluate the extent to which information systems support internal process efficiency, customer satisfaction, and the development of organizational capabilities. Thus, organizations can ensure that investments in information systems have a real impact on overall business performance (Maryani & Darudiato, 2010).

The real application of all these concepts can be seen in the case study of the Metro City Education Office, which uses the Ward and Peppard approach in developing an IS/IT strategic plan. This organization faces challenges in managing PTK data and the need for fast and accurate information. By analyzing the business and IT environment, both internal and external, and using analysis techniques such as SWOT, CSF, Value Chain, and PEST, the Education Office is able to design an IS/IT blueprint that is in line with the organization's goals. The end result is an integrated information system, capable of improving public services, and strengthening digital education management. This confirms that an information system strategy designed with a

scientific and structured approach can be an important instrument in realizing efficiency, accountability, and competitive advantage of organizations, both in the public and private sectors.

In addition to the strategic approaches mentioned, it is also important for organizations to consider aspects of information technology governance (IT governance) in designing information system strategies. IT governance functions as a control mechanism so that technology implementation runs according to policy directions, regulations, and supports the achievement of optimal business value. According to Weill and Ross (2004), IT governance ensures that IT-related decisions are not only determined by technical departments, but also involve strategic stakeholders such as top management and end users. This approach encourages cross-functional involvement in IT decision making, strengthens accountability, and minimizes the potential for system failure due to miscommunication or inconsistency between the system and business needs.

In the context of global dynamics and digital transformation, information system strategies also need to anticipate very rapid changes in the external environment. The presence of disruptive technologies such as artificial intelligence (AI), big data, cloud computing, and the Internet of Things (IoT) raises the need for adaptive planning. According to Gartner (2023), successful organizations are not the most technologically advanced, but the most responsive in adapting their information systems to business changes. Therefore, a modern IS strategy must include an element of agility, namely the ability of the system to quickly adapt to changes in customer needs, regulations, and market conditions.

A mature information system strategy must also consider the aspect of change management, especially in terms of human resource readiness. The implementation of a new system often faces resistance from employees who are accustomed to old work patterns. According to Lewin's Change Model theory and the ADKAR approach, change must begin with creating awareness of the need for change, followed by increasing desire, knowledge, ability, and reinforcement so that the change is sustainable. IS strategy planning that ignores the human factor risks creating a system that is not optimally utilized due to low user adoption rates.

Furthermore, it is important for organizations to evaluate and monitor the implementation of IS strategies periodically. This evaluation is not only limited to the technical side such as system uptime or server capacity, but must also measure its strategic impact on business processes and performance achievement. In this case, evaluation models such as the IT Balanced Scorecard or COBIT Performance Measurement can be used to assess the success of the system in four main dimensions: contribution to strategy, IT efficiency, user orientation, and future development. Continuous monitoring also allows organizations to dynamically adjust strategies when there is a gap between expectations and actual system performance.

Finally, the success of information systems strategy is greatly influenced by visionary digital leadership. Leaders who understand the strategic value of IT will encourage the creation of an organizational culture that is open to innovation and cross-unit collaboration. Digital leaders not only act as sponsors of information systems projects, but also as change agents who facilitate communication between IT teams and business units. As explained by Westerman et al. (2014), organizations with strong digital leaders are better able to maximize the opportunities of technology and avoid the pitfalls of implementation that simply follows trends. Therefore, an effective

information systems strategy is the result of synergy between technology, processes, people, and directed strategic leadership.

CONCLUSION

From the material that has been presented, it can be concluded that knowledge is needed to determine an effective way to determine the information system process. Information system strategy emphasizes the determination of information system applications needed by the Organization. To determine an information system strategy that can support the achievement of the organization's vision and mission, an understanding of the organization's business strategy is needed. Strategic planning of information systems is the process of identifying a portfolio of computer-based information system applications that will support the organization in implementing business plans and realizing its business goals. Strategic planning of information systems studies the influence of information systems on business performance and the contribution to the organization in choosing strategic steps.

An important factor in the IS strategic planning process is the use of methodology. Methodology is a collection of methods, techniques, and tools used to do something. The purpose of using methodology in IS strategic planning is to minimize the risk of failure, ensure the involvement of all stakeholders and minimize individual dependency, and emphasize the process and the specified goals. One of the commonly used methodologies is the Ward and Peppard method. This version of the methodology consists of input stages (including analyzes) and output stages (including strategies). Some analysis techniques/methods used in IS/IT strategic planning in this methodology include SWOT analysis, Value Chain analysis, Critical Success Factors method, Balanced Scorecard method, PEST analysis and McFarlan's Strategic Grid.

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