DINASTI INTERNATIONAL JOURNAL OF DIGITAL BUSINESS AND MANAGEMENT (DIJDBM)
E-ISSN : 2715-4203
P-ISSN : 2715-419X
DINASTI PUBLISHER
https://dinastipub.org/DIJDBM dinasti.info@gmail.com +62 811 7404 455
DOI: https://doi.org/10.38035/dijdbm.

Information Technology Based Project Management: Critical Success Factors and Indicators of Success

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Abstract: In the business world that is increasingly moving towards digitalization, technology-based project management is a branch of management that is gaining more attention, in line with the increasing growth of startup companies and the digital transformation process of companies. Looking back at the failure rate of information technology-based projects in the past, it can be concluded that project failure not only causes financial losses but can also impact the reputation and trust of clients, so it is important to be equipped with good project management skills. Management needs to learn the knowledge and have the skills to manage information technology projects in order to increase the chances of success. This paper will discuss project management based on information systems, including critical success factors and indicators of success. The research was conducted by reviewing the literature. From the research results, it is concluded that the critical success factors for information technology-based project management are budget, methodology, technical competence of the team and risk management along with adequate mitigation measures and adaptability to sudden changes and state of the art innovation. The indicators of project success are based on the benefits of the product produced, product quality, sustainability and ROI.

Keyword: Project, Information Technology, Startup

INTRODUCTION

Digital business is currently one of the business lines that has a bright future in the era of technological globalization. Digital business is a business model that focuses on using digital technology and the internet to facilitate various aspects of business, including marketing, sales, operations, and customer service. In digital business, technology is not only a tool, but also the core of the company's business strategy. Because digital technology is a rapidly changing technology, companies are required to understand and adapt more quickly than in conventional businesses (Nicholas et al, 2020). With rapid technological growth and widespread internet

access, digital business is becoming a dominant force in the business world, enabling companies to reach global markets, improve operational efficiency, and provide unique customer experiences. However, in the implementation of digital-based project management, there is a considerable probability of project management failure. In the early 2010s, information technology-based project management was still not treated differently from general project management. Data from Harvard Business Review, concluded that of 1471 IT projects in the United States, 27% experienced cost overruns and 70% of projects experienced schedule delays (Flybnjerg et al 2011). The number of projects that are considered successful is less than 30%. Examples of project management failures that resulted in losses for the company is the failure of the IT project run by Hershey with a loss value of USD 100 million (Westfall, 2020), Nike with an investment value of USD 400 million (Kheybari, et al 2020) and Avon with a project value of USD 125 million (Pandey et al 2022). In these three cases, there are similarities in the final evaluation of the project, where the project was forced to be canceled in the middle of the road because the implementation was considered a failure or not in accordance with the expected benefits. This problem contributes and puts pressure on the company's management because it is considered to have failed to carry out project management. This paper will discuss various views of researchers from various sources, regarding information technology-based project management, including conclusions regarding critical success factors and success indicators. The conclusion of the paper discussion is expected to be an input for the information technology-based project management process that is increasingly widespread in Indonesia.

METHOD

The research method used in this research is systematic literature research, in which the researcher reviews published scientific articles related to the topic under discussion. The researcher will conduct a systematic search using databases and relevant keywords with a focus on the topic of information technology-based project management. Furthermore, researchers will select articles according to predetermined inclusion and exclusion criteria, such as relevance to the research topic, quality of research methodology, and reliability of sources. The data obtained from the selected articles will then be analyzed comprehensively to identify critical success factors and success indicators of information technology-based project management.

RESULTS AND DISCUSSION

Project management and information technology-based project management both focus on planning, organizing, and managing resources to achieve specific project goals (Iriarte, 2020). However, there are some key similarities and differences between the two, especially with regard to scope and technical complexity. The similarities between the two types of project management include project initiation, where at the beginning of the project, relevant parties need to define objectives, identify stakeholders, and set project boundaries. The next similarity is in the project planning step, where both types of project management require the development of a detailed project plan that outlines the tasks, schedule, resource allocation, and budget required to complete the project successfully. At the project execution stage, in both information technology project management and general project management, the project plan is implemented by coordinating activities, managing resources, and monitoring progress to ensure tasks are completed on schedule. The Risk Management process in principle also has similar goals and methods, namely to minimize potential problems and disruptions in project implementation. One of the key points in project management is that effective communication and stakeholder engagement are important components of information technology-based project management and project management in general. Interests are informed, involved, and

satisfied with the progress and results of the project. (Zasa, 2020) While the differences between these two types of project management are mainly technical complexity, where information technology projects often involve complex technical components, such as software development, system integration, or network infrastructure, which require specialized knowledge and expertise compared to general projects. A further difference is resource allocation, where information technology projects typically require specific technical resources, such as hardware, software, and skilled information technology professionals, which may differ from the resources required in general project management. On the issue of change management, information technology projects often involve significant changes to existing systems or processes, where managing change and overcoming potential resistance requires specific change management techniques that may not be as prominent in general project management. The next issue is quality assurance, in that information technology projects often involve extensive testing, debugging and ensuring adherence to technical standards, whereas general projects may focus more on meeting quality criteria for the end result. Another major factor is security and privacy, where information technology projects often require special considerations for data security, privacy regulations, and cybersecurity, which are not usually prevalent in general project management (Santos et al 2022, Ngo et al 2022, Suryanto et al 2020).

Critical Success Factors (CSF) in information technology-based project management are key elements that must be executed properly for an information technology project to succeed. Here are some critical factors that determine the success of information technology projects. Realistic and clear goal setting, ensuring effective communication between all parties involved, risk management at the right scope, so as to avoid the project going over budget or schedule, the use of an appropriate methodology. example whether agile or scrum, set according to flexibility and adaptation to change (Iriarte et al 2020). Equally important factors are the technical competence of the team, risk management and mitigation, executive support and stakeholder engagement, adequate resource allocation. Addressing these critical success factors requires careful planning and meticulous execution, running an innovative project does not rely on old ways and habits, and it is important to periodically evaluate the progress of the project relative to these factors (Vrchota, Jet al, 2020). The importance of Integration of agile and traditional methods, flexibility (Zasa, 2020), change management, adequate training (Santos et al 2020), effective planning followed by proper execution (Suryanto et al 2020), methodological flexibility, adaptability (Gemino 2020), and related to the ature of info technology projects, requires high adaptability and rapid response to change (Bergman et al. 2020).

Meanwhile, the success indicators of information technology-based projects are concluded by measuring the extent to which the project achieves the objectives set effectively and efficiently. Indicators of the success of information technology projects include the principle of the benefits of the product or service produced, the ability to complete the project on time, the quality of the final product produced, the level of Return of Investment (ROI), the effective use of resources (human, technological and financial). scalability and sustainability of the innovation process, and finally the ability to use and manage budgets (Gemino et al 2021, Gemino et al 2021), scalability and sustainability of the innovation process, and finally the ability to use and manage budgets (Gemino et al 2021, Iriarte et al, 2020, Raharjo et al 2020, Nicholas et al 2020, Bergmann et al 2019), stakeholder satisfaction and project adaptability to changes that may occur in the short and medium time span ((Vrchota et al., 2020). , 2020, Zasa 2020).

CONCLUSION

Based on the results of the literature review in this paper, the critical success factors in information technology-based project management are not much different from conventional project management, but in the digital business line, some things that need to be considered are the budget, methodology, team technical competence and risk management along with adequate mitigation steps. The indicators of project success are based on the benefits of the products produced, product quality, scalability and sustainability of the innovation process, and finally the ability to use and manage the budget. At the end of the project, an assessment is also made based on stakeholder satisfaction and project adaptability to changes that may occur in the short and medium time span and sustainability as well as ROI. Further studies on this topic should discuss the successes and failures of information technology-related projects in Indonesia, in order to provide significant input on the country's digital business landscape and indirectly contribute to the country's economic growth.

REFERENCE

Bergmann, T., & Karwowski, W. (2019). Agile project manajement and project success: A literature review. In *Advances in Human Factors, Business Manajement and Society: Proceedings of the AHFE 2018 International Conference on Human Factors, Business Manajement and Society, July 21-25, 2018, Loews Sapphire Falls Resort at Universal Studios, Orlando, Florida, USA 9* (pp. 405-414). Springer International Publishing.

Flybnjerg, B & Budzier A (2011). Why Your IT Project May be Riskier than you Think. Harvard Business Review 2011

Gemino, A., Horner Reich, B., & Serrador, P. M. (2021). Agile, traditional, and hybrid approaches to project success: is hybrid a poor second choice?. *Project manajement journal*, *52*(2), 161-175.

Iriarte, C., & Bayona, S. (2020). IT projects success factors: a literature review. *International Journal of Information Systems and Project Manajement*, *8*(2), 49-78.

Kheybari, S., Rezaie, F. M., Naji, S. A., Javdanmehr, M., & Rezaei, J. (2020). Evaluation of factors contributing to the failure of information systems in public universities: The case of Iran. *Information Systems*, *92*, 101534.

Ngo, J., & Hwang, B. G. (2022). Critical Project Manajement knowledge and skills for managing projects with smart technologies. *Journal of Manajement in Engineering*, *38*(6), 05022013.

Nicholas, J. M., & Steyn, H. (2020). *Project manajement for engineering, business and technology*. Routledge.

Pandey, A. K., Singh, R. K., Jayesh, G. S., Khare, N., & Gupta, S. K. (2022). Examining the Role of Enterprise Resource Planning (ERP) in Improving Business Operations in Companies. *ECS Transactions*, *107*(1), 2681.

Raharjo, T., & Purwandari, B. (2020, January). Agile project manajement challenges and mapping solutions: A systematic literature review. In *Proceedings of the 3rd International Conference on Software Engineering and Information Manajement* (pp. 123-129).

Santos, P. D. O., & de Carvalho, M. M. (2022). Exploring the challenges and benefits for scaling agile project manajement to large projects: a review. *Requirements engineering*, *27*(1), 117-134.

Suryanto, A, & Nugroho, A (2020). *Manajemen Proyek Teknologi Informasi*. Deepublish.

Vrchota, J., Řehoř, P., Maříková, M., & Pech, M. (2020). Critical success factors of the project manajement in relation to industry 4.0 for sustainability of projects. *Sustainability*, *13*(1), 281.

Westfall, A. (2020). *Information technology project failure caused by inadequate project scoping: an exploratory qualitative inquiry on inadequate project scopes* (Doctoral dissertation, Capella University).

Zasa, F. P., Patrucco, A., & Pellizzoni, E. (2020). Managing the hybrid organization: How can agile and traditional project manajement coexist?. *Research-Technology Manajement*, *64*(1), 54-63..