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The Influence of Quality Management Systems on the Success of Information Technology

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Abstract

Regarding the influence of quality management systems on the success of information technology (IT), it can be started by explaining the importance of quality in the development and implementation of IT systems. In the context of modern business, information technology plays a very important role in supporting operations, increasing efficiency, and providing competitive advantage. However, to ensure that IT systems truly support these goals, quality in every aspect of IT development and management must be maintained. This study aims to analyze the influence of quality management systems on the success of information technology. In an increasingly complex business environment, the quality of information technology is a determining factor in achieving organizational goals. An effective quality management system is expected to increase efficiency, reduce risk, and ensure that results are in accordance with predetermined specifications.

Keywords: Quality,Management,System, Technology, Efficiency, ISO 9001

Introduction

The rapid development of information technology (IT) has encouraged organizations in various sectors to continue to innovate through the implementation of Information Technology (Murray, 2013);(Nugraha & Saefudin, 2022). This is not only a means to improve operational efficiency, but also a major driver in achieving competitive advantage. However, the high complexity of Information Technology is often a challenge in itself, considering the many technical, managerial, and organizational aspects that must be managed effectively (Nugraha & Saefudin, 2022);(Andini, 2021).

The success of Information Technology is highly dependent on the organization's ability to manage various determining factors, such as time, cost, and quality (Mathieson, 1991);(Erumban & Das, 2016). Of the three factors, quality is often the most critical but also the most challenging aspect to maintain (Haftu, 2019). A quality management system is present as a systematic approach designed to ensure that every aspect of Information Technology meets the established quality standards (Asikin, Azzahra, & Afridi, 2024). With the implementation of a good quality management system, it is expected that

Information Technology can run more structured, measurable, and have end results that are in accordance with stakeholder expectations (Stolterman & Fors, 2004);(Williams, Sawyer, & Hutchinson, 1999).

However, although many organizations have adopted various quality management standards and methodologies such as ISO 9001, ITIL, and CMMI, the level of success of Information Technology still varies (Xiang, Magnini, & Fesenmaier, 2015). Some have successfully achieved their objectives, while others have failed to meet expectations, both in terms of end results and resource utilization. This inconsistency raises questions about the effectiveness of quality management systems implemented in the context of Information Technology (IT) (Naveed, Irfan, Aslam, Anwar, & Ayub, 2019);(Arfiandi, Pudjiantoro, & Wahana, 2016).

The positive effects of implementing a good quality management system on IT success include: 1) Reduced Risk of Failure: With a QMS in place, the risk of errors or failures in IT development and implementation can be minimized. Standardized processes help identify and address problems before they become serious. 2) Increased Efficiency: A QMS enables more efficient processes because of clear procedures and best practices being followed. This can reduce the time and cost required to complete IT. 3) Increased User Satisfaction: Well-managed IT systems tend to be more aligned with end-user needs, as the QMS process often includes user needs evaluation and rigorous quality testing. 4) Increased Competitiveness: Organizations that implement a QMS in their IT are often able to provide superior products or services compared to competitors, due to higher quality and better system reliability.

The purpose of writing a journal on the influence of quality management systems on the success of information technology (IT) can cover several aspects. Examining how the implementation of quality management systems contributes to the success of information technology, including its impact on efficiency, quality, and user satisfaction. Revealing best practices in implementing QMS in IT, and how these practices can improve performance and reduce the risk of failure An Analysis of Implementing Total Quality Management in Education: Succes and Challenging Factors (Khurniawan, Sailah, Muljono, Indriyanto, & Maarif, 2020). Identifying the challenges faced by organizations in implementing QMS in Information Technology, and providing recommendations to overcome these obstacles (Arifin, Darmawan, Hartanto, & Rahman, 2022);(Amelia, 2023). Examining how the successful implementation of QMS in IT can have a positive impact on overall business performance, including increasing competitiveness and achieving strategic goals. And providing guidance for practitioners and academics on effective ways to integrate QMS in Information Technology, to ensure optimal results and in accordance with the desired quality standards

Research Method

Using statistical techniques to analyze data from surveys or historical data on Information Technology involving quality management systems to utilize information from various sources accessed via the internet and other sources. Based on the journal

title "The Influence of Quality Management Systems on the Success of Information Technology", the data collected includes factors relevant to the objectives.

Result and Discussion

Improved Product Quality: Implementing a quality management system, such as ISO 9001, in information technology (IT) results in improved end-product quality and user satisfaction. Reduced User Complaints: Organizations implementing this standard experience a decrease in the number of user complaints. User Satisfaction Survey Results: There is an increase in user satisfaction survey results.

Reduced Defects and Errors: More standardized processes and thorough testing reduce the likelihood of defects and operational problems, as measured by the reduction of bugs and errors in the software. Resource Efficiency: Information technology that follows quality management system practices can complete projects faster with fewer resources. Risk Identification and Mitigation: Implementing a quality management system facilitates proactive identification and mitigation of risks, reducing the likelihood of major problems affecting IT performance.

Discussion

The implementation of quality management systems focuses on process control and continuous improvement, which is very important in the IT context. By implementing strict procedures and standards, organizations can achieve more systematic processes and better quality control. This not only reduces defects in products but also increases user satisfaction. From the available data, it can be seen that organizations that implement this standard have not only succeeded in reducing complaints but also showed positive results in satisfaction surveys. This shows that a structured and standardized approach contributes to a better user experience.

In addition, the implementation of quality management systems helps in reducing the number of technical errors and operational problems. With tighter documentation and controls, organizations can be more efficient in completing projects and reducing the time required for troubleshooting. This in turn increases productivity and optimizes the use of resources.

Finally, the importance of risk identification and mitigation cannot be ignored. With better mitigation and control plans, IT-related risks can be managed more effectively, thereby reducing the potential for major problems that can affect the overall performance and success of information technology. The implementation of quality management systems in information technology is not only about achieving certain standards, but also creating a culture of continuous improvement. By emphasizing the importance of clear procedures and thorough testing, organizations can build trust among stakeholders, including end users and development teams. This creates an environment that supports innovation as teams feel safe to experiment and provide constructive feedback.

Additionally, integrating quality management systems helps speed up the product development cycle. With better quality control, issues can be detected earlier in the process, reducing the cost and time required for late-stage fixes. This also contributes to software development that is more responsive to user needs, given a deeper understanding of their expectations and preferences. Well-documented processes also enable more effective knowledge transfer within teams. When procedures and best practices are written down and shared, new team members can learn quickly, reducing the reliance on specific individuals. This not only improves collaboration but also maintains consistency in the quality of the product produced.

Finally, better risk management has implications for the long-term sustainability of an organization. By identifying potential risks early on, companies can implement appropriate mitigation strategies, reducing the negative impact on their operations. This not only protects existing investments but also opens up new opportunities for innovative technology development. In the context of intense global competition, this proactive approach is becoming increasingly important to ensure that organizations remain relevant and successful.

Implementing a quality management system (QMS) in information technology (IT) is a very important strategic step to improve product quality and user satisfaction. QMS, such as the ISO 9001 standard, emphasizes process control and continuous improvement, which are crucial in this fast-growing industry. One of the key aspects of a QMS is the focus on process, which ensures that every step in the software development lifecycle is carried out to a high standard of quality.

Improved Quality and User Usage

One of the most striking results of implementing a QMS is the improvement in the quality of the final product. By implementing strict procedures and standards, organizations can ensure that the products they produce meet or even exceed user expectations. Data shows that companies that implement a QMS often experience a significant decrease in the number of user complaints. This not only reflects improvements in product quality but also improves the company's image in the eyes of users.

Improved user satisfaction not only impacts customer loyalty but can also contribute to long-term business growth. When users are satisfied with products and services, they are more likely to recommend them to others, which can lead to new customers. In other words, QMS not only improves the product, but also creates a sustainable positive effect on the company's market share and reputation.

Standardized processes and thorough testing

A more standardized process, along with thorough testing, serves to reduce the likelihood of defects in a product. In software development, this means systematically conducting unit, integration, and system testing. When each phase of development has strict quality control, the risk of bugs or technical errors appearing late in the process is

reduced. This not only reduces the time required for remediation but also optimizes the costs incurred by the company.

Furthermore, comprehensive testing allows the team to gain valuable feedback early in the development process, which means that the final product is more in line with the needs of the user. This creates a positive feedback loop, where users can provide input that is used to improve the next version of the product.

Efficiency in resource use

One of the significant benefits of implementing a QMS is efficiency in resource use. Information technology that follows QMS practices can complete projects faster and use fewer resources. With good documentation and structured processes, teams can work more efficiently, reducing the time it takes to troubleshoot and develop solutions. This efficiency is not only related to time, but also to cost reduction. When teams are able to complete projects faster and with fewer errors, the cost of repairs and revisions is also reduced. In other words, QMS contributes to increased profitability of the organization.

Risk Identification and Mitigation

Risk identification and mitigation are key elements of QMS that have a significant impact on the success of information technology. In a dynamic and rapidly changing IT environment, risks such as security breaches, system errors, and project failures are always present. By implementing QMS, organizations can proactively identify potential risks and plan appropriate mitigation strategies.

This process not only helps in avoiding major issues that can disrupt operations but also creates a culture of risk awareness within the team. When every team member is involved in the risk identification process, they are better equipped to address emerging challenges and contribute to better solutions. This creates a sense of collective responsibility that is critical in achieving organizational goals.

Continuous Improvement Culture

Implementing a quality management system also fosters a culture of continuous improvement within the organization. When companies adopt QMS principles, they not only focus on achieving certain standards but also commit to continuously improving their processes and products. This encourages innovation and creativity among the team, as they are empowered to find new and better ways to do their jobs. A culture of continuous improvement also creates a more positive work environment. Employees feel more engaged and valued when they see that their contributions are recognized and implemented in process improvements. This not only improves team morale but also reduces employee turnover, which is often a major problem in the IT industry.

Conclusion

Standardized processes and stringent quality control ensure that Information Technology meets high quality standards, reduces defects, and increases user satisfaction. Early identification and mitigation of risks, reduces the likelihood of technical errors, and ensures better risk management, thereby reducing disruptions in Information Technology. Information Technology implemented with a quality management system tends to be more successful in meeting time, budget, and technical specifications. This contributes to higher success rates and more satisfying results for users. Overall, the implementation of a quality management system in information technology strengthens performance, reduces risks, and increases user satisfaction, leading to greater success and better results in Information Technology.

BIBLIOGRAFI

Amelia, Amelia. (2023). The Influence of Brand Awareness, Perceived Quality, Brand Association, Brand Loyalty and Price on Daihatsu Car Buying Decisions (Case Study at Daihatsu Pemalang Car Dealership). *Journal Research of Social Science, Economics, and Management*, *3*(1), 286–292.

Andini, Silfia. (2021). Cloud-Based Information Technology Architecture Modeling Computing. *JOURNAL OF DYNAMICS (International Journal of Dynamics in Engineering and Sciences)*, *6*(2), 51–56.

Arfiandi, F., Pudjiantoro, T. H., & Wahana, A. (2016). Teknologi Informasi Menggunakan Framework Information Technology Infrastructure Library (Itil). *Semin. Nas. Teknol. Inf. Dan Komun*, *2016*, 18–19.

Arifin, Samsul, Darmawan, Didit, Hartanto, Cahya Fajar Budi, & Rahman, Abdul. (2022). Human Resources based on Total Quality Management. *Journal of Social Science Studies (JOS3)*, *2*(1), 17–20.

Asikin, Muhamad Zaenal, Azzahra, Adelia, & Afridi, Fahad Khan. (2024). Strategies for the Utilization of Information Technology in Micro, Small, and Medium Business Marketing. *American Journal of Economic and Management Business (AJEMB)*, *3*(5), 1–13.

Erumban, Abdul A., & Das, Deb Kusum. (2016). Information and communication technology and economic growth in India. *Telecommunications Policy*, *40*(5), 412–431. https://doi.org/10.1016/j.telpol.2015.08.006

Haftu, Girmay Giday. (2019). Information communications technology and economic growth in Sub-Saharan Africa: A panel data approach. *Telecommunications Policy*, *43*(1), 88–99. https://doi.org/10.1016/j.telpol.2018.03.010

Khurniawan, Arie Wibowo, Sailah, Illah, Muljono, Pudji, Indriyanto, Bambang, & Maarif, M. Syamsul. (2020). An Analysis of Implementing Total Quality Management in Education: Succes and Challenging Factors. *International Journal of Learning and Development*, *10*(2), 44–59. https://doi.org/https://doi.org/10.5296/ijld.v10i2.17270

Mathieson, Kieran. (1991). Predicting user intentions: Comparing the technology acceptance model with the theory of planned behavior. *Information Systems Research*, *2*(3), 173–191. https://doi.org/10.1287/isre.2.3.173

Murray, Andrew. (2013). *Information technology law: the law and society*. Oxford University Press.

Naveed, Rana Tahir, Irfan, Muhammad, Aslam, Hassan Danial, Anwar, Bilal, & Ayub,

Arslan. (2019). The effect of general banking information technology system on customers' satisfaction with the moderating effect of customer trust: an empirical study from Pakistani commercial (Islamic) banks. *Al-Qalam*, *24*(1), 387–401.

Nugraha, Ginanjar, & Saefudin, Saefudin. (2022). Planning Enterprise Architecture Information System Distribution of Population Data Recipients of Social Assistance During the Covid-19 Pandemic Using The Open Group Architecture Framework (TOGAF). *Jurnal Wahana Informatika*, *1*(2), 77–103.

Stolterman, Erik, & Fors, Anna Croon. (2004). Information technology and the good life. *Information Systems Research: Relevant Theory and Informed Practice*, 687–692.

Williams, Brian K., Sawyer, Stacey C., & Hutchinson, Sarah E. (1999). *Using information technology: A practical introduction to computers & communications*. ERIC.

Xiang, Zheng, Magnini, Vincent P., & Fesenmaier, Daniel R. (2015). Information technology and consumer behavior in travel and tourism: Insights from travel planning using the internet. *Journal of Retailing and Consumer Services*, *22*, 244–249.