Analysis of The Use of Cloud-Based Applications For Facility & Asset Management

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Abstract

This research focuses on the use of cloud-based applications in facility and asset management by the General Affairs division at the Lembaga Management FEB UI. With technological advances, cloud computing offers solutions that simplify various asset management processes, including real-time asset monitoring, maintenance, and reporting. This research uses a qualitative method with a case study approach, involving employees from the General Affair division as participants. The data collection process was conducted through interviews, observation, and documentation, to understand how cloud-based applications are implemented in daily operations. This research also explores the challenges that may arise, such as the need for adequate technology infrastructure and employee readiness in adopting new technology. With a focus on asset management, this research seeks to provide an overview of the important role of cloud technology in improving efficiency and transparency in organizations.

Keyword: cloud computing; general affair; facility; asset management

1. Introduction

Asset and facility management plays an important role in supporting company activities. With the development of technology, the use of computer-based information systems is now replacing manual methods in managing company attendance, promotions, and assets. The development of information technology helps companies to simplify operational processes and encourage innovation (Saputra et al., 2024). In today's digital era, manual recording and reporting methods using books or software such as Excel are increasingly being abandoned. The General Affair (GA) division needs a system that allows monitoring and accessing data quickly and precisely, because they have responsibility for managing assets, facilities, and other work units (Ummah, 2019).

Cloud-based technological innovation emerged as a solution to improve efficiency and transparency in facility and asset management. Cloud-based applications allow direct data access, which makes it easier to monitor and manage assets in various places. This technology not only adds flexibility but also supports data-driven auditing and decision-making. However, implementing cloud technology still faces several challenges, such as data security, integration with other systems, and buy-in from the entire GA team. Therefore, it is necessary to conduct a thorough assessment of the effectiveness of this technology so that companies can maximize the benefits obtained.

This study of the use of cloud applications to support the management of inventory, facilities and assets by the General Affairs division offers a new understanding of the application of this technology. The main focus of this analysis is on the effect of cloud technology on operational efficiency and transparency, as well as the issues that arise during implementation. This approach makes a significant contribution to the development of asset and facility management strategies, taking into account the specific needs of the company and the important role of General Affair in maintaining smooth business operations.

2. Literature Review

2.1. Facility and Asset Management

Facility and asset management involves the definition and classification of assets and facilities that aim to support an organization's operations and sustainability. Facilities are defined as physical and non-physical facilities that facilitate work processes, such as buildings, equipment, catering services, or information services (Aryani Soemitro & Suprayitno, 2018; Nurpratama & Yudianto, 2022). Meanwhile, assets are tangible and intangible resources that have economic value, such as land, buildings, technological devices, and information used to support operational activities (Indonesia, 2020; Putri & Nurjanah, 2018).

Maintenance of facilities and assets is an important part of maintaining their lifespan and efficiency of use. Maintenance methods, both preventive and repressive, are carried out to prevent fatal damage or repair damaged conditions (Studi et al., 2016). With a time-based or item-type approach, maintenance can improve operational productivity and ensure facilities are always ready for use. This strategy supports sustainability through optimizing maintenance costs and reducing operational disruptions.

In addition, digitalization through cloud-based technology has transformed facility and asset management, enabling data integration, real-time tracking, and process automation (Trisakti & Affair, 2023). With digital management, organizations can improve efficiency, transparency, and accountability in daily operations. However, the implementation of these technologies requires attention to stable internet connections, data security, and employee training to optimize their benefits. This digital transformation not only supports efficiency but also sustainability through more structured and environmentally friendly resource management.

2.2. Cloud Computing

Cloud computing is a mechanism for providing information technology services that allows users to access resources such as servers, storage, and applications via the internet on an on-demand basis (Riana, 2020). This technology helps companies save on infrastructure costs and focus on core business. Cloud services are categorized into three types:

1) Infrastructure as a Service (IaaS), where users rent virtual IT infrastructure
2) Platform as a Service (PaaS), which provides an environment for running applications
3) Software as a Service (SaaS), where complete applications are provided by the vendor for direct use.

Cloud computing offers advantages such as fast installation time, flexibility, and hardware cost savings (Saleh & Belakang, 2019). However, this technology also has challenges, including high license fees, dependence on a stable internet connection, and security risks such as DDoS attacks or data leakage (Data, 2023). In addition, multi-cloud adoption adds complexity to security management, and AI-based attacks and edge computing introduce new risks that require specialized management.

The use of cloud computing has changed the way enterprises store and manage data, accelerate operational processes, and support collaboration. However, its successful implementation requires attention to compliance with data privacy regulations such as GDPR and CCPA, as well as the implementation of adequate security solutions. In the context of asset management, cloud-based services enable real-time data access, automation and integration that significantly improve operational efficiency and transparency.

2.3. General Affair's Role in Facilities and Asset Management

General Affairs (GA) is a division within a company that supports operational activities through the management of various needs, such as security, cleaning, procurement of goods, operational vehicles, and general administration (Kanesyah & Santoso, 2022; Nugroho & Indriyani, 2019). GAs are responsible for maintaining the company's assets and facilities, ensuring smooth operations, and handling licensing, occupational health and safety (HSE), and corporate social responsibility issues. With such a broad scope of duties, GA is a critical component in maintaining organizational efficiency and productivity.

Digitalization has changed the way General Affair manages company facilities and assets. Before cloud-based technology, management was done manually with data spread across various departments. With cloud-based applications, GA can now monitor assets in real-time, automate maintenance scheduling, and manage inventory more quickly and accurately (Trisakti & Affair, 2023). Digitalization also enables reduced operational costs

through planned preventive maintenance, and supports sustainability through reduced paper usage and more efficient energy management.

Through technology integration, General Affair is able to improve collaboration between departments and provide more transparency in reporting. Previously time-consuming repair or asset procurement requests can now be managed faster through the cloud system. Operational sustainability is also strengthened with the flexibility of remote management, supporting green office and energy efficiency initiatives. This transformation shows that the role of General Affair is not only to support operations, but also to drive sustainable innovation in the management of company facilities and assets.

3. Material and Method

3.1 Design Study

This research applies a qualitative approach by using interviews as a data collection tool conducted on the General Affair Manager, General Affair Administration Staff and Vehicle and Expedition Administration Staff. According to (Handayani, 2020), qualitative research is descriptive research with more emphasis on analysis, process, and meaning. The basic theory is used as a guide to ensure the research focus is in accordance with the real conditions in the field. Meanwhile, (Pambudi et al., 2017) state that research methods involve steps and ways applied by researchers to carry out research, starting from problem identification to finding the desired solution. From this explanation, the researcher concludes that qualitative research is a descriptive study that tends to focus on analysis. Qualitative research is exploratory in nature.

3.2 Data Validity Technique

In this study, researchers applied the triangulation method. Data triangulation is an approach to evaluate the validity of data by using elements from outside the data itself as a means of checking or comparing the data (Geza Mahesa Putra et al., 2023).

In this research, the researcher utilized source triangulation and data collection method triangulation to ensure data accuracy. In this study, researchers obtained information from several relevant employees, so that there is consistency or alignment of data needed to support this research. In addition, the triangulation method in this study was collected through observation, interview, and documentation techniques related to the required data as shown below:

Figure 3.1 Data Validity Technique
Source : Data processed by researchers

3.3 Data Analysis

Data processing techniques are steps to find and organize data that has been obtained from the process of interviews, observations, and documentation in a structured manner, grouping information, compiling patterns, determining which is crucial and which needs to be researched, and make conclusions so that they are easily understood by everyone (Jariah et al., 2023). In this research, researchers applied data analysis techniques using the

interactive model known from Miles and Huberman, which includes four stages in the process:

1) Data Collection
   Researchers combine analysis with data collection to obtain information through observation, interviews, and documentation from relevant sources as material in the study.
2) Data Reduction
   Data reduction is the process of simplifying and eliminating irrelevant data. Thus, the data can become more meaningful information and make it easier to draw conclusions. This process is necessary because of the abundant amount of data and its complexity.
3) Data Presentation
   Data presentation is a step to compile a report on the results of research that has been carried out so that it can be understood and analyzed as expected. The data presented must be clear so that it is easy to understand.
4) Verification or Conclusion
   This last stage is an initial conclusion that is temporary and can change if there is no strong evidence or support at the data collection stage. Conversely, if the conclusion is supported by new evidence, then the resulting conclusion is considered

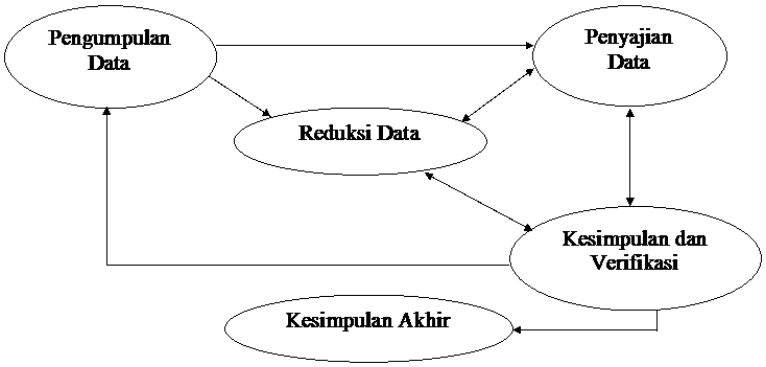

Figure 3.2 Data Analysis Component
Source : Data processed by researchers

4. Result

4.1 Data Description

This research is a qualitative approach that aims to find out how the use of cloud-based applications for facility and asset management at Lembaga Management FEB UI. Lembaga Management FEB UI is a management consulting service company under the auspices of the Faculty of Economics and Business, University of Indonesia, located in Central Jakarta. Through this approach, researchers try to explore relevant information to understand the issues being studied.

No	Partisipan	Lama Bekerja	Jabatan
1.	Partisipan A	34 tahun	Manager General Affair
2.	Partisipan B	28 tahun	Staff Administrasi General Affair
3.	Partisipan C	5 tahun	Staff Administrasi General Affair
4.	Partisipan D	8 tahun	Staff Administrasi Kendaraan & Ekspedisi

Table 4.1 Participant Data
Source: Data processed by researcher

4.2 Data Result

In this research, the data generated showed the effectiveness of the application of qualitative research methods with a case study approach in General Affair LM FEB UI. Researchers used interviews, observation, and documentation to collect data which was then analyzed using the Miles and Huberman interactive model which includes data collection, reduction, presentation, and verification. The results show that cloud-based applications facilitate the management of facilities and assets by providing real-time data access, centralizing information, and increasing collaboration and transparency. Although there are obstacles such as unstable internet connections, data security, and technology resistance, this application is still considered to have the potential to support efficiency and accountability in asset management.

4.3 Data Discussion

The results showed that the use of cloud-based applications in General Affair LM FEB UI shows significant effectiveness in facilities and asset management, with increased efficiency through real-time access, data centralization, and better collaboration between teams. However, obstacles such as dependence on internet connection, data security risks, resistance to new technology, and infrastructure costs are challenges that need to be overcome. The application also improves transparency of asset management by providing accurate and up-to-date data, supporting accountability and simplifying the audit process. Although some employees had difficulty adapting at first, the general perception of the app was positive due to the improved flexibility, efficiency and collaboration, although improved data security and further training were needed to optimize the benefits.

5. Conclusion, Implication, and Recommendation

5.1 Conclusion

Cloud-based applications have proven effective in managing facilities and assets at the FEB UI Management Institute. With real-time data access, the General Affairs Division can track and update asset information quickly and accurately, reducing manual errors and speeding up decision-making. Transparency is also improved, supporting accountability in internal and external audits. The main obstacles in implementing this application include reliance on a stable internet connection, data security concerns, and employee resistance to new technology. These challenges require reliable infrastructure support, employee training, and efforts to improve security to minimize risks. Nonetheless, cloud applications provide significant benefits, including work flexibility, operational efficiency, and collaboration between departments. With the right adaptation and management strategies,

these technologies can support more effective asset management and contribute to improved overall company performance.

5.2 Implication

The implications of this research theoretically support previous studies by (Zakaria & Afrianto, 2023), (Olimat et al., 2023), (Windiarti & Miftahurrizqi, 2022), (Setyorini & Suliman, 2021), (Rachmawati et al., 2018), (Rumetna, 2018), (Wildana, 2018), (Supriyono et al., 2017), (Pambudi et al., 2017), (Zulfiandri & Wardhani, 2015), which show that cloud-based technology supports operational efficiency and effectiveness while presenting challenges such as resource management, information security, and adoption of technological innovation. Practically speaking, the Management Institute of FEB UI is advised to develop an internal application or web that is specifically designed to meet the specific needs of facilities and asset management. This approach will enable integration with internal systems, real-time tracking, reporting automation, and improved data security, while reducing reliance on third-party cloud service providers and allowing for the development of new features in the future.

5.3 Recommendation

1) Further research can use a quantitative approach to measure how effective and efficient the use of cloud-based applications is in managing company facilities and assets and can research in different places to complement the results of research that has been carried out.
2) To get good research results, further research is expected to add the required documentation so that the results obtained are more accurate.

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