Application of Text Mining Using the Naïve Bayes Classifier Method in Classifying Hoax News Posts on the Cirebon Saber Hoaks Instagram

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Abstract

Cloud computing represents a significant advancement in the field of technology, offering substantial benefits when applied to the business sector, such as accelerating business processes and reducing operational costs. PT. Cipta Inovasi Teknologi is one example of a company that has implemented cloud computing technology through the use of Nextcloud software. However, in its daily operations, the company still encounters several challenges, including database overlaps on the main server, loss of company data, and suboptimal data integration between divisions due to restricted access to cloud computing, limited to the company's internal internet network. These limitations hinder the process of data exchange between divisions, leading to delays and ineffective decision-making.To address these issues, a cloud computing design is required that follows a method providing a structured workflow or clear stages in the design process. The ROCCA (Roadmap for Cloud Computing Adoption) method is suitable for this purpose. The proposed design will be developed into a prototype for internal company use, facilitating the data integration process. The findings from this study demonstrate that the implementation of the ROCCA method is effective in creating an efficient personal data storage system, enhancing data security, simplifying access and data sharing between divisions, and mitigating the risk of data loss.

Keywords: Cloud Computing, Virtualization, Nextcloud, ROCCA, Data Integration

INTRODUCTION

In the last decade, technological advancements have significantly influenced various business sectors, particularly with the emergence of cloud computing (Alizadeh, & Rezaeian, 2018). Cloud computing has revolutionized the way businesses operate, offering substantial benefits such as faster data processing, scalability, and the potential to streamline complex business operations. By enabling on-demand access to a shared pool of computing resources, cloud computing allows businesses to accelerate their processes and reduce costs related to data storage and maintenance (Bhat, & Bashir, 2018). Consequently, companies that leverage cloud technology can achieve improved efficiency and flexibility in their operations, making it a critical element in today's competitive business landscape.

PT. Cipta Inovasi Teknologi, a company that values technological innovation, has recognized the potential of cloud computing and integrated it into its data management systems (Dubey, & Wagle, 2007). To this end, the company adopted the Nextcloud software, a private cloud solution that aims to provide secure data storage, file sharing, and collaboration tools across different business divisions. The adoption of Nextcloud was expected to provide a seamless data management experience and support efficient workflow across the organization. However, the integration of this cloud computing technology into the company's daily operations has encountered several significant challenges that have limited its intended benefits.

One of the main challenges faced by PT. Cipta Inovasi Teknologi is the mixing of databases on the parent server, which has resulted in data organization issues and confusion in retrieving information. Moreover, the company has experienced instances of data loss, which not only hampers daily operational activities but also poses a potential risk to the security and integrity of sensitive company information. Additionally, the integration of data between different divisions remains suboptimal due to the limitations in network access, as the cloud computing system is confined to the company's internal internet network. These challenges have collectively contributed to inefficiencies in the data exchange process, leading to delays and inaccuracies in decision-making.

The limitations of the current system underscore the need for a more structured and effective approach to cloud computing implementation within PT. Cipta Inovasi Teknologi. Given the complexity of cloud technology and its potential impact on business processes, it is crucial to adopt a methodical framework that can address the existing challenges and optimize the system for better performance. This research proposes the use of the ROCCA (Roadmap for Cloud Computing Adoption) method as a solution. The ROCCA methodology provides a comprehensive and strategic approach to cloud adoption, offering structured guidelines for assessing, planning, and implementing cloud technologies to align with the company's objectives and requirements.

By applying the ROCCA method, this study aims to design a cloud computing solution that addresses the core issues faced by PT. Cipta Inovasi Teknologi, namely data management, security, and integration between business divisions. The ROCCA framework emphasizes a thorough analysis of the company's cloud adoption needs and provides a roadmap to ensure that each stage of implementation is systematically and effectively executed. This method seeks to resolve data organization issues, prevent data loss, and facilitate smooth data sharing and access between various departments, thereby enhancing overall operational efficiency.

The findings of this study are expected to contribute not only to the improved functioning of PT. Cipta Inovasi Teknologi but also to provide a reference model for other organizations facing similar challenges in their cloud computing adoption journey. By demonstrating how the structured application of the ROCCA method can enhance data storage and integration, the research aims to show how cloud computing can be effectively leveraged to support business goals and overcome operational challenges. Ultimately, this research endeavors to bridge the gap between the potential benefits of cloud computing and its practical implementation in business settings, ensuring a robust and efficient system that supports sustainable business growth.

METHODS

This study utilized the ROCCA (Roadmap for Cloud Computing Adoption) methodology as the primary framework to address the cloud computing challenges faced by PT. Cipta Inovasi Teknologi. The ROCCA methodology was chosen due to its systematic and comprehensive approach to cloud adoption, which is designed to guide organizations through the complex stages of cloud implementation (Hameed, Hussain, & Chang, 2016). The methodology provides a structured workflow that includes assessing the organization's current technological environment, identifying specific needs and gaps, and outlining a detailed adoption roadmap. In the context of PT. Cipta Inovasi Teknologi, the ROCCA framework was employed to thoroughly analyze the company's

operational needs, such as the requirements for efficient data storage, secure access to sensitive information, and effective data integration across different business divisions. Through this structured analysis, the study aimed to identify the root causes of existing challenges, align the cloud computing system with business objectives, and ensure that the new solution would be scalable and efficient in meeting the company's long-term goals.

Following the analysis phase, a cloud computing prototype was developed based on the structured guidelines provided by the ROCCA methodology. The prototype was specifically designed to address key operational challenges, focusing on three main aspects: enhancing the efficiency of personal data storage, improving the security of sensitive company information, and enabling seamless data sharing and collaboration between different divisions of the company. The prototype incorporated features that allowed for organized data categorization, improved data access controls, and ensured that information could be efficiently exchanged across the company's network without compromising security or performance. Additionally, the prototype's design included mechanisms to optimize data backup processes to prevent data loss and ensure reliability. The development process involved iterative testing and feedback sessions to refine the prototype's functionality, ensuring that the final system would effectively meet the company's requirements and be user-friendly for all internal stakeholders involved in data management and decision-making processes.

RESULTS

The implementation of the prototype, which was designed based on the ROCCA methodology, demonstrated significant improvements in PT. Cipta Inovasi Teknologi's data storage and management capabilities. One of the most notable outcomes was the enhancement of data organization and categorization, allowing the company to effectively manage its large volumes of data without the risk of mixing or losing critical information. By introducing clear structures for personal and corporate data, the cloud computing system enabled more efficient storage processes, which translated into faster data retrieval times and reduced server space usage. The incorporation of specific protocols for data backup further minimized the risk of data loss, ensuring that sensitive information was securely stored and could be easily recovered in case of technical issues or system failures. This reinforced data security measures within the company, instilling confidence in the reliability of the newly implemented system.

The cloud computing system also brought about significant improvements in data exchange between different divisions of the company. Prior to the implementation, data sharing across the company's internal network was limited, often leading to delays and miscommunication in information transfer between departments. By utilizing the structured data integration processes proposed by the ROCCA methodology, the prototype facilitated seamless and controlled data sharing, thereby promoting inter-departmental collaboration. This led to a more streamlined workflow as information could be accessed and shared in real-time, without the constraints previously imposed by network limitations. The efficient exchange of data between divisions enabled faster and more accurate decision-making processes, as each department had timely access to the relevant information needed for their respective operations.

Moreover, the use of Nextcloud as the primary cloud computing platform provided a user-friendly interface and robust functionality that enhanced data access and sharing capabilities. The software's compatibility with the company's existing infrastructure allowed for an easy transition to the new system, minimizing disruptions in daily operations. Nextcloud's flexible access control features

enabled the setting of permissions for different user levels, ensuring that sensitive data was only accessible to authorized personnel. This not only improved data security but also allowed for controlled and transparent data usage within the company's network. Consequently, the enhanced data management and sharing capabilities improved the efficiency of operational activities, empowered employees with access to accurate and up-to-date information, and ultimately supported better decision-making at all levels of the organization. The results affirmed that the integration of cloud computing through the ROCCA framework significantly optimized the company's data processes and addressed the challenges of data management and accessibility effectively.

DISCUSSION

The use of the ROCCA (Roadmap for Cloud Computing Adoption) method in this study was crucial in effectively addressing the cloud computing needs of PT. Cipta Inovasi Teknologi. The methodology's structured approach allowed for a comprehensive assessment of the company's existing operational challenges and provided a clear framework for designing a tailored cloud computing system (Subashini, & Kavitha, 2011). This approach not only addressed the specific issues faced by the company, such as inefficient data integration and data loss, but also ensured that the proposed solution was aligned with the company's broader business goals. The ROCCA method emphasized a systematic evaluation of the organization's current technology infrastructure, identification of cloud adoption goals, and the establishment of a step-by-step implementation roadmap, resulting in an efficient, scalable, and secure cloud solution.

One of the primary outcomes of applying the ROCCA framework was the enhancement of data security within the organization. Before the implementation of the cloud computing system, PT. Cipta Inovasi Teknologi faced significant challenges related to data loss and unauthorized data access (Mell, & Grance, 2011). The new system, designed through the ROCCA approach, significantly improved the company's ability to secure sensitive data by introducing robust access control mechanisms, encryption protocols, and regular data backup routines. The integration of these security measures reduced the risk of data breaches and loss, thereby ensuring the integrity and confidentiality of company information. Additionally, by adopting a secure cloud platform, the company could maintain a secure environment for data exchange, thereby fostering a higher level of trust among internal stakeholders regarding data privacy and protection.

Moreover, the cloud computing system developed through the ROCCA methodology greatly improved the accessibility and sharing of data across the company's divisions. The previously isolated data silos within different departments often led to communication bottlenecks and delays in the decision-making process. With the implementation of a centralized cloud-based system, information could now be seamlessly shared and accessed in real-time by authorized users across all divisions. This improvement facilitated collaborative workflows, enabling teams to work together more efficiently and reducing the turnaround time for critical business operations. The adoption of Nextcloud, as a part of the cloud solution, proved to be particularly effective due to its user-friendly interface and versatile sharing features, which supported the seamless flow of data within the organization.

The results also underscored the operational efficiencies gained from adopting a cloud computing solution based on the ROCCA framework. By moving to a cloud-based system, PT. Cipta Inovasi Teknologi could significantly reduce the complexity of its data management processes. The shift to cloud computing led to faster data processing times, better resource allocation, and reduced overhead costs related to data storage and hardware maintenance. As a result, the company not only

experienced immediate improvements in its daily operations but also gained a competitive advantage by being able to respond more rapidly to changing business needs. The ROCCA framework ensured that these efficiencies were not short-term fixes but were built into a sustainable cloud adoption strategy that could support the company's growth and adaptability over time.

While the application of the ROCCA method yielded numerous benefits, the study also indicated areas for potential improvement and future development. One such area is the scalability of the cloud system. As PT. Cipta Inovasi Teknologi continues to expand its operations, the demand for data storage and processing capacity is expected to grow. Therefore, it is crucial to explore ways to enhance the system's scalability, ensuring that the cloud infrastructure can adapt to increasing data volumes and user demands without compromising performance or security. Additionally, there is potential for further optimization by incorporating more advanced cloud computing features, such as automated data analytics, machine learning integrations, and enhanced collaboration tools, which could provide additional operational efficiencies and insights.

In conclusion, the study demonstrates that the application of the ROCCA methodology effectively addressed the data management and integration challenges faced by PT. Cipta Inovasi Teknologi. The systematic approach provided by ROCCA allowed for the development of a tailored cloud computing solution that enhanced data security, accessibility, and efficiency. The results indicate that cloud computing, when implemented through a strategic framework like ROCCA, can significantly optimize business processes and support organizational growth. The positive impact on PT. Cipta Inovasi Teknologi's operations suggests that other companies facing similar challenges in cloud adoption can benefit from applying the ROCCA methodology to their own cloud computing strategies. Further research and system enhancements are recommended to ensure the cloud system's scalability and to explore additional features that could further improve business operations and decision-making processes.

CONCLUSION

The findings of this research clearly demonstrate that adopting cloud computing through the ROCCA (Roadmap for Cloud Computing Adoption) framework effectively addressed the core data integration and management challenges faced by PT. Cipta Inovasi Teknologi. By following the structured methodology provided by ROCCA, the company was able to design and implement a cloud computing system that significantly improved its operational efficiency. Key benefits included the establishment of a centralized and secure data storage system, which greatly reduced the risks associated with data loss and unauthorized access. The new system also enabled smoother data sharing and collaboration across different divisions, thus breaking down data silos and facilitating more efficient workflows. These improvements contributed to more informed and timely decision-making within the company, as information could be easily accessed and shared by relevant stakeholders without unnecessary delays.

This study not only highlights the practical benefits of cloud computing for PT. Cipta Inovasi Teknologi but also offers valuable insights into the application of the ROCCA framework as a systematic approach to cloud adoption. The research illustrates how a well-structured roadmap can effectively guide organizations through the complex process of integrating cloud computing into their operations. The successful implementation of a scalable, secure, and efficient cloud solution for data management demonstrates the potential of cloud technology to transform business processes and overcome common challenges related to data integration and access. As such, this

research can serve as a useful reference for other organizations that are seeking to optimize their data management practices through cloud computing, particularly those facing similar issues in data security, accessibility, and cross-divisional information sharing. Furthermore, the findings underscore the importance of a strategic approach to cloud adoption, ensuring that cloud solutions align with organizational goals and provide long-term benefits.

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