# Mobile Application Development for Optimizing Management Information Systems

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| Article Info | ABSTRACT |
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| | The development of Mobile Applications for Optimization of Management Information Systems is an important innovation in the context of enhancing efficiency and effectiveness of organizational management. The objective of this research is to design and implement a mobile application that can optimize the information management process within a management system. Research methods used include user needs surveys, system requirements analysis, application design, prototype development, as well as testing and evaluation by users. The research results indicate that the developed mobile application is able to improve information accessibility, accelerate decision-making processes, and enhance work efficiency. Based on the data analysis conducted, the conclusion of this research is that the implementation of mobile applications in management information systems can significantly enhance organizational performance. This research provides a significant contribution in the context of user-oriented information technology development and improving organizational operational efficiency.<br><br>*This is an open access article under the <u>CC BY-SA</u> license.* |

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## 1. INTRODUCTION

In the era of digital transformation that has hit various industrial sectors, the use of information technology, especially mobile applications, has become an important solution in efforts to increase the efficiency and effectiveness of organizational management systems [1]. The existence of mobile applications enables real-time accessibility of information, speeds up the decision-making process, and allows managers and staff to stay connected and productive wherever they are. In a management context, mobile applications promise the ability to optimize information management, resource management, and facilitate more effective communication and coordination between various units and levels within an organization.

The theoretical framework that is the basis of this research includes key concepts in information systems management, mobile application development, as well as theories related to organizational efficiency and effectiveness [2]. Through a deep understanding of this theoretical framework, researchers can design and implement mobile applications that are not only responsive to user needs, but also effectively align with organizational goals and strategies.

Previous research has highlighted the importance of integrating information technology in organizational management to improve performance. However, there is still a need for further research that specifically explores the potential of mobile applications in the context of management information system optimization. Therefore, this research aims to fill this knowledge gap by designing, developing, and evaluating a mobile application that focuses on the specific needs of management information systems in a real organizational environment.

Thus, this research not only provides a practical contribution in the form of technology development that can be applied directly by organizations, but also an academic contribution by expanding our understanding of the role of mobile applications in optimizing management information systems [3].

## 2. THEORETICAL BASIS

1. Management Information Systems (MSI)
Information Systems Management is a discipline that studies how information technology can be used effectively to support organizational goals. The theories in MSI include the concepts of information system planning, user needs analysis, application development, implementation, and evaluation and management of information systems [4]. In the context of developing mobile applications for optimizing management information systems, MSI principles are an important basis for understanding user needs and designing appropriate solutions.

2. Mobile Application Development
Theories in mobile application development include various development methodologies such as Software Development Models (SDLC), Agile Methodologies, and User-Centered Design. These concepts help in designing, developing, and testing mobile applications to suit user needs and have an intuitive and responsive interface.

3. Organizational Efficiency and Effectiveness
Theories related to organizational efficiency and effectiveness are important in the context of developing mobile applications for management information systems. The concept of efficiency refers to an organization's ability to achieve goals by using available resources optimally, while effectiveness refers to the extent to which an organization can achieve its stated goals [5]. By implementing the right mobile applications, organizations can improve their operational efficiency and achieve higher effectiveness in achieving their strategic goals.

By combining concepts from MSI, mobile application development, and organizational efficiency and effectiveness, this research can provide a solid theoretical foundation for understanding the importance of mobile application development in supporting management information systems and its potential in improving overall organizational performance.

## 3. RESEARCH METHODOLOGY

1. Types of Research Approach

This research uses qualitative and quantitative approaches. A qualitative approach is used to understand user needs and analyze qualitative aspects in mobile application development, such as user interface and user experience. A quantitative approach is used to measure application performance based on certain parameters and to measure its impact on the efficiency and effectiveness of management information systems [6].

2. Development Method

The development method used is the Software Development Life Cycle (SDLC) Model with the application of iteration to ensure flexibility in adapting to changing user needs. The stages in SDLC include requirements analysis, system design, implementation, testing, and maintenance.

3. Variable Type

The variables that are the focus of the research include:
a. Independent Variable: Mobile application development.
b. Dependent Variable: Efficiency and effectiveness of management information systems.
c. Control Variables: Environmental factors that may influence the acceptance and use of an application, such as technological infrastructure and organizational culture.

4. How to Collect Data

Data was collected through several methods, including interviews with users and top-level managers to understand their needs and expectations for the application, direct observation of existing business processes, and surveys to collect quantitative data about user perceptions of the application being developed.

5. Data Processing and Verification Techniques

Qualitative data from interviews and observations were analyzed using thematic analysis techniques to identify main patterns and themes [7]. Quantitative data from the survey was analyzed using descriptive statistical techniques to present the results numerically. Data verification is carried out through data triangulation, namely comparing and confirming the suitability of qualitative and quantitative data as well as through peer review to ensure the validity of the findings.

## 4. RESULTS AND DISCUSSION

Results:

Mobile Application Development for Optimizing Management Information Systems has resulted in an application that has been successfully implemented and tested in an organizational environment [8]. This application is designed to facilitate various management functions, including information management, communication between teams, and performance monitoring and reporting. During the development phase, this application has gone through a series of iterations to ensure compliance with user needs and organizational goals.

Discussion:

Mobile application development is the right strategic step in optimizing management information systems. By adopting mobile technology, organizations can overcome limitations in information accessibility and speed up workflow. The evaluation results show that this application makes a significant contribution to increasing the efficiency of information management. Users report significant time savings in obtaining the necessary information and the ability to make decisions quickly and appropriately.

Apart from that, this application has also succeeded in increasing the effectiveness of communication and collaboration between team members. Features such as group chat and real-time notification systems have helped improve coordination between departments and facilitate more effective collaboration in completing shared tasks. In the context of performance monitoring, this application has made it easy for managers to track project progress and overall team performance through an intuitive dashboard.

However, a number of challenges were also identified during the development and implementation process. One of them is the resistance of some organizational members to change and the adoption of new technology [9]. Therefore, change management strategies and user training are key in ensuring maximum acceptance and use of these applications.

Overall, mobile application development has proven its value in improving the efficiency and effectiveness of management information systems. The next step is to continuously monitor and evaluate the performance of this application and identify potential for further development to meet the evolving needs of the organization and its users.

## 5. CLOSURE

Mobile Application Development for Optimizing Management Information Systems has had a significant positive impact in the context of organizational operational efficiency and effectiveness. Through this research, it has been proven that the adoption of mobile technology can change the way organizations manage information, communicate and make decisions.

The mobile application developed succeeded in providing solutions to the challenges faced in managing management information systems, such as limited information accessibility and inefficiencies in communication [10]. With intuitive and responsive features, this application has helped speed up workflows, improve collaboration between teams, and enable managers to make more accurate and timely data-driven decisions.

However, mobile application development is not the end of the journey. Ongoing technological changes and evolving organizational needs demand continued efforts in developing and improving these applications. It is necessary to continuously monitor application performance and be responsive to user feedback so that the application remains relevant and useful for the organization.

Additionally, it is important to remember that the success of mobile application implementation depends not only on technical aspects, but also on human and organizational factors. Therefore, change management and user training strategies must be

kept in mind to ensure successful adoption and widespread acceptance of these applications.

Thus, this research not only provides a practical contribution in the form of innovative technological development, but also an academic contribution in expanding our understanding of the role of mobile applications in improving the performance of management information systems. It is hoped that the findings from this research can form the basis for further developments in this field and provide sustainable benefits for organizations in the future.

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