

## Optimizing Business Processes through Information System IntegrationA Case Study in Banda Aceh

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### ABSTRACT

This research aims to optimize business processes through information system integration using a case study in Banda Aceh. This research uses a qualitative approach with a single case study research method. Data was collected through in-depth interviews, direct observation and documentation. Research respondents consist of managers and employees involved in the business processes to be integrated. Data analysis was carried out using content analysis. The research results show that information system integration significantly increases the efficiency and effectiveness of business processes in Banda Aceh. Information system integration enables faster data processing, better monitoring of business processes, and more accurate decision making. Additionally, information system integration also enables better collaboration between different departments and stakeholders. Based on these findings, it can be concluded that information system integration plays an important role in optimizing business processes in Banda Aceh. By integrating information systems, companies can increase operational efficiency, reduce costs, and increase customer satisfaction. However, the implementation of information systems integration also faces challenges, such as technical difficulties and changes in organizational culture. Therefore, strong commitment and support from company management is needed to achieve optimal results.

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## 1. INTRODUCTION

The use of information systems has become a key factor in optimizing business processes in the current digital era. In this context, information systems integration has been recognized as an effective approach in improving the efficiency and effectiveness of business processes [1]. This research aims to investigate how information system integration can be used to optimize business processes in Banda Aceh, by taking a case study approach.

The theoretical framework of this research is based on relevant theories in the fields of information systems and operational management. First, information systems integration theory underscores the importance of connecting separate systems in an organization to create a smooth and integrated flow of information. Information systems integration focuses on combining different data, functions, and business processes into one coordinated system.

Furthermore, business process optimization theory contributes to understanding how business processes can be analyzed, improved, and automated to achieve maximum efficiency and effectiveness[2]. Through the identification and elimination of non-value-added activities, business process optimization aims to reduce costs, improve quality and reduce cycle times.

This case study was conducted in Banda Aceh to provide an in-depth understanding of the specific context in which information systems integration can contribute to optimizing business processes. Banda Aceh was chosen because it is a growing business center with sectors such as trade, manufacturing and strong services.

This research has significant practical implications. It is hoped that the results of this research will provide insight for companies in Banda Aceh and other regions regarding the benefits and challenges in implementing information system integration to optimize business processes. In addition, this research can provide a theoretical contribution in expanding understanding of the role of information systems integration in a developing business context.

In order to achieve the objectives of this research, researchers used a single case study research method with a qualitative approach. Data was collected through in-depth interviews, direct observation and document analysis.

Through this research, it is hoped that a better understanding can be obtained about how information system integration can optimize business processes in Banda Aceh, as well as the challenges that may be faced in its implementation. This is expected to contribute to the development of knowledge and practice in the domain of information systems and operational management.

## **2. THEORETICAL BASIS**

### **1. Information Systems Integration**

Information systems integration is an approach that connects separate systems in an organization to create a smooth and integrated flow of information. Information systems integration aims to integrate different data, functions and business processes into one coordinated system. In the context of business process optimization, information system integration plays an important role in improving operational efficiency and effectiveness [3]. Through information system integration, companies can reduce data duplication, increase information accessibility, and increase collaboration between different departments.

### **2. Business Process Optimization**

Business process optimization is an approach used to analyze, improve, and automate business processes with the aim of achieving maximum efficiency and effectiveness. Business process optimization involves identifying and eliminating activities that do not add value, reducing cycle time, improving quality, and reducing costs. In the context of information system integration, business process optimization can be achieved by integrating and automating different business processes using an integrated information system.

### **3. Information Systems**

An information system is a collection of interrelated components that work together to collect, store, process, and convey relevant information to support decision making and organizational operations. Information systems can include hardware, software, data, procedures, and personnel involved in managing information. Information systems integration involves combining different information systems

to create a coordinated information system.

#### 4. Operational Management

Operational management involves planning, organizing, controlling, and supervising operational activities in an organization. In the context of business process optimization, operational management aims to achieve efficiency and effectiveness in the implementation of business processes [4]. Information systems integration can help operational management by providing better visibility into operational activities, enabling real-time monitoring, and improving coordination between different departments.

In this research, information system integration and business process optimization are important theoretical foundations. Information system integration helps optimize business processes by integrating different information systems, while business process optimization plays a role in analyzing and improving the efficiency and effectiveness of business processes. Apart from that, understanding information systems and operational management is also relevant to understanding the context of using information system integration in optimizing business processes.

### 3. RESEARCH METHODOLOGY

#### Types of Research Approaches

This research uses a qualitative approach with a single case study research method. The qualitative approach allows researchers to understand in depth the context, processes and experiences that occur in information systems integration and business process optimization in Banda Aceh. A single case study is used to gain a detailed and comprehensive understanding of the implementation of information systems integration and its impact on business processes in Banda Aceh.

#### Development Methods

This research uses a development method based on a case study approach. The development method is used to design and implement solutions that can optimize business processes through information system integration [5]. Through the development method, researchers will identify needs, design solutions, implement solutions, and evaluate their impact in the context of a case study in Banda Aceh.

#### Variable Type

The variables in this research consist of two types, namely independent variables and dependent variables. The independent variable is information systems integration, which involves combining different information systems into one coordinated system. The dependent variable is business process optimization, which includes increasing the efficiency and effectiveness of business processes.

#### How to Collect Data

The data in this research was collected through several techniques, namely:

1. In-depth Interviews: Researchers will conduct in-depth interviews with managers and employees involved in the business processes to be integrated. This interview will provide an in-depth understanding of the challenges, benefits, and experiences in information systems integration and business process optimization.
2. Direct Observation: Researchers will directly observe ongoing business processes in Banda Aceh. These observations will provide an understanding of existing business processes, interactions between departments, and the potential to increase efficiency through information system integration.
3. Document Analysis: Researchers will analyze related documents, such as business reports, policies and procedures, and existing information system documentation. Analysis of this document will provide additional information about existing business processes and potential improvements

through information system integration.

#### Data Processing and Verification Techniques

The collected data will be processed using content analysis. Content analysis involves coding and categorizing data to identify patterns, themes, and relationships that emerge from interview, observation, and document data [6]. Data will be verified through triangulation, namely by comparing findings from various different data sources. This will ensure the validity and reliability of the research results.

The following is a cycle of methods commonly used in software development:

1. **Requirements analysis:** This stage involves an in-depth understanding of user needs and project goals. Analyzing these needs helps in formulating functional and non-functional requirements.
2. **Design:** At this stage, the software designer creates a system design based on previously analyzed requirements. This design includes system structure, architecture, user interface, and other components.
3. **Implementation:** This stage involves coding the software based on a previously created design. The program code is written in the selected programming language.
4. **Testing:** After implementation, the software must be tested to ensure that it functions as expected and meets the specified requirements. These tests include functional testing, integration testing, performance testing, error testing, etc.
5. **Compilation:** Once testing is complete, the software is ready to be distributed or implemented in a production environment. The compiling process involves installing and configuring the software in the target environment.
6. **Maintenance:** After the software is used, software maintenance is required to correct errors, improve performance, or add new features according to user needs.

The cycle of this method can repeat itself iteratively, where after the maintenance phase, a new requirements analysis can emerge that starts a new cycle.

#### **4. RESULTS AND DISCUSSION**

The method used in this research involves identifying business needs, modeling business processes, selecting appropriate information systems, system implementation, and evaluating results. Data was collected through interviews with stakeholders and direct observation of existing business processes [7]. The results of this research provide a better understanding of the benefits of information system integration in improving business processes in Banda Aceh.

##### Results:

In this research, it was found that information system integration had a positive impact in optimizing business processes in Banda Aceh. Information system integration allows companies to integrate data and information from various departments and business functions, eliminate data redundancy and errors, and increase operational efficiency.

Through information system integration, companies in Banda Aceh have succeeded in increasing collaboration between departments, reducing response times to customer requests, and increasing visibility of all business processes. This integration also allows companies to automate most routine tasks, reducing operational costs and increasing productivity.

Apart from that, information system integration also helps companies gain better insight into their business performance through more accurate and real-time data analysis. This allows companies to identify existing opportunities and challenges, and make better and faster decisions.

Discussion:

This research shows that information system integration has a crucial role in optimizing business processes in Banda Aceh. In this context, it is important for companies to consider factors such as adequate IT infrastructure, system interoperability, data security, and integration capabilities with existing systems.

This research has practical implications in improving the efficiency and effectiveness of business processes in Banda Aceh. It is hoped that the results of this research can provide valuable input for companies in Banda Aceh and encourage wider adoption of information system integration in the region. However, this research has limitations, namely the focus on case studies in Banda Aceh. Therefore, further research is needed involving more companies and regions to expand the generalization of the results of this research.

Conclusion:

This research shows that information system integration has an important role in optimizing business processes in Banda Aceh. Information system integration can improve efficiency, effectiveness, collaboration and visibility of business processes, as well as provide better insight into business performance [8]. It is hoped that the results of this research can become a basis for companies in Banda Aceh to adopt information system integration in an effort to increase their competitiveness and business success.

## **5. CLOSURE**

In this research, the importance of information system integration in optimizing business processes in Banda Aceh has been investigated. Through case studies involving several companies in the region, this research provides valuable insight into the benefits of information systems integration in improving operational efficiency and effectiveness.

The results of this research indicate that information system integration can overcome the challenges faced by companies in managing their business processes. This integration allows companies to integrate data and information from various departments and business functions, reducing data redundancy and errors, and increasing collaboration between departments.

In addition, information system integration also allows companies to automate routine tasks, reduce operational costs, and increase productivity. Accurate and real-time data analysis also provides better insight into business performance, helping companies make better and faster decisions.

In the context of Banda Aceh, this research provides valuable input for companies in the region. It is hoped that the results of this research can encourage wider adoption of information system integration, thereby having a positive impact in increasing competitiveness and business success in Banda Aceh.

However, this research has limitations in terms of focusing on a case study in Banda Aceh. Therefore, further research involving more companies and regions may be needed to expand the generalizability of the results of this study.

Overall, this research makes an important contribution in understanding the role of information system integration in optimizing business processes in Banda Aceh. It is hoped that this research can serve as a basis for companies in the region to implement information systems integration and achieve higher efficiency, increased collaboration, and overall business success.

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