

System Development Methodology For Accounting Information System

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Abstract

This study discusses the importance of selecting an appropriate information system development method before starting the development process to ensure the creation of a system that meets expectations. Although there are many methodologies or models for software development, confusion often arises when choosing the most suitable one based on specific situations or environments. The article also outlines the basic concepts of systems, accounting information systems, and the stages of system analysis, including proposal preparation, system analysis implementation, and the preparation of system analysis reports. The research methodology used is library research, which involves studying literature and analyzing various written information sources. The findings highlight the importance of written documentation at each stage of system development to effectively communicate plans and findings to information users, as well as the significance of employing effective information-gathering techniques during system analysis. Therefore, selecting the right method and maintaining thorough documentation are crucial to successfully developing an information system that meets user needs and supports organizational goals.

Keywords: Information System, Library Research, Methodology, Software Development, System Analysis, System Implementaation.

1. Introduction

Accounting information systems are crucial for supporting the continuity and development of a company (J. W. Wibowo, 2012). An accounting information system is a collection of human resources and tools designed to transform financial transaction data or financial statements into valuable information to assist companies in decision-making (M. Romney, B. P. J. Steinbart, Accounting Information System, Salemba Empat, Jakarta, 2011). According to Romney & Steinbart (2018:10), an accounting information system is a system that can collect, record, store, and process data to produce information for decisionmakers.

This includes people, procedures and instructions, data, software, information technology infrastructure, internal controls, and security measures. According to Turner, Weickgenannt, & Copeland (2017:4), an accounting information system encompasses processes, procedures, and systems that capture accounting data from business processes, record accounting data into appropriate records, process detailed accounting data by classifying, summarizing, and consolidating it, and report summarized accounting data to both internal and external users.

Generally, every organization has an information system to collect, store, view, and distribute information. Choosing an information system development method before developing a system is a crucial step that must be carefully considered to create a well-functioning system that meets expectations. There are many software development methodologies or models, but we often struggle to choose the most suitable one based on the situation or environment we face. It can be concluded that an accounting information system is a system that can generate information by collecting, recording, storing, processing, and producing accounting data reports that can be used for decision-making by both internal and external users.

According to Romney & Steinbart (2018:11), there are six components of an accounting information system: users who use the system; procedures and instructions used to collect, process, and store data; data about the organization and its business activities; software used to process the data; information technology infrastructure, including computers, peripheral devices, and communication networks used in processing the accounting information system; and internal controls and security procedures to protect the accounting information system.

The basic concept of a system is a group of computer-based components created by humans to manage data, store, collect, and transform input systems into output systems to achieve predetermined goals and objectives. An accounting information system is an organizational component that collects, classifies, processes, and communicates financial information and decision-making information relevant to external parties (such as tax offices, investors, and creditors) and internal parties (mainly management). The existence of an accounting information system is expected to help and address the organization's problems.

To obtain an information system utilized by an organization or institution, an open development is necessary (Setiawansyah, Q.J. Adrian, and R.N. Dejiva, 2021). An information system, as an integration of an organized method (collecting, inputting, and processing data, controlling, and generating information) based on computers, aims to achieve the organization's goals and objectives.

An information system in an organization acts as a glue between organizational components, as the information generated from an information system facilitates communication (Doni Waluya Firdaus, 2017). The advantage of implementing a computerized information system is its ability to process data quickly and accurately (H. Sulistiani, S. Octriana, and Q.J. Adrian, 2020). During each stage of system development, system analysis produces written documents that present the work plans to be carried out in system development or the work results of the development implementation (Mulyadi, 2016). These written documents are provided to information users as a medium for system analysis to communicate their work to information users.

Other studies state that an information system is a series of formal procedures in an organization that collects required data or reports, then processes them into information that can be distributed to recipients and parties needing the information (Tantik Sumarlin & Nur Rokhman, 2023). An accounting information system is a computer-based system used to process accounting data, such as transaction forms, which will then be managed to produce accountable reports (Tantik Sumarlin & Nur Rokhman, 2023). An information system is a component consisting of people, information technology, and work procedures that process, store, analyze, and disseminate information to achieve a goal. The information system receives data inputs, instructions, and processes data according to commands to produce outputs; this is part of the events occurring within the information system (Anna, Nurmallasari, 2020).

Information system development employs various methods ranging from structured to object-oriented approaches. These development methods will ultimately determine the platform on which the information system will operate, whether on web-based, mobile, or desktop devices. Selecting the platform on which the system will operate is a critical process, as the availability of the system to users can be measured by the devices or platforms where the system runs. Considering the importance of information system development methods and platform selection, this study gathers data from previous research on information systems to identify development methods and information system platforms (Triandini et al., 2019).

System design is an activity of planning and designing a good system that includes the steps of operations in the data management process (Nopiah Alpiana et al., 2023). Generally, information system users want software developed quickly and with user involvement to ensure the resulting software meets their needs (Ahmad Munawir, Nurhasa Nugroho). Using the system involves operating the system. This stage occurs after the system is completed, during which the researcher conducts training for the personnel who will use the system, providing sufficient understanding and knowledge about the information system, the position, and the tasks of each function (Heni Sulistiani, Esy Ervina Yanti, 2021). It involves processing large amounts of data, storing files or archives properly without requiring much space (S. Yana, R.D. Gunawan, and A. Budiman, 2020). banyak (S. Yana, R.D. Gunawan dan A. Budiman. 2020).

The data collected are journals discussing accounting information system development from 2016 to 2023. These data are identified using the Systematic Literature Review (SLR) method. Using the SLR method allows for a systematic review and identification of journals, with each process following established steps or protocols (Rzavian et al., 2019). Additionally, the SLR method can prevent subjective identification, and the identification results are expected to add to the literature on using the SLR method in journal identification (Kuhl et al., 2019).

2. Methodology

The methodology used in this research is known as library research. The research conducted in the library and this search have more than just the listed function of collecting research data. This shows that library research is limited to activities that use sources available in the library collection and do not require field investigation. Meanwhile, experts in the field state that library research is a data collection method involving the study of books, literature, records, and various reports related to the problem to be addressed.

Library studies can also involve examining various reference books and comparative findings from previous research, both of which are useful in obtaining a theoretical basis for the problem to be studied. As you study the literature, you also collect data through reviewing books, other literature, records, and various reports related to the issue you want to address.

3. Results and Discussion

Analysis of Reports Generated by the Current System, In this stage, the system analyst studies the reports produced by the current accounting system to identify the information required by management that is not provided by the current system. Transaction Analysis: The system analyst then analyzes each transaction. Transaction analysis includes examining the forms, records, and procedures used to carry out each transaction. For each transaction produced by the company, the system analyst gathers information regarding:

- a. The organizational units involved in the transaction.
- b. The forms used.
- c. The authorization system for executing the transaction.
- d. The accounting records used to document the transaction.
- e. The procedures for executing the transaction.

Sources of Information in System Analysis : In system analysis, the sources of information for system development are:

- a. The current accounting system in use
- b. Sources from other companies

- c. External sources
- d. Sources from other companies
- e. External sources

PREPARATION OF THE SYSTEM ANALYSIS REPORT The final result of the system evaluation process is presented by the system analyst in a document called the system analysis report. This report is a written document created by the system analyst to be provided to the information users. The report contains the findings obtained by the system analyst during the system analysis, which include:

- a. A restatement of the underlying reasons and the scope of the system analysis carried out by the system analyst.
- b. A list of major problems identified by the system analyst.
- c. A statement of the information requirements needed by the information users.
- d. A statement of significant assumptions made by the system analyst during the system analysis.
- e. A projection of the resources required and the costs involved in designing a new accounting system, or modifying the current system used by the company. This projection includes the feasibility of continuing to the next stages of accounting system development.
- f. Recommendations concerning the proposed system or the requirements that must be met by the proposed system.

System Design. Design is the process of transforming user information needs into various alternative designs of information systems proposed to users for consideration. This stage of system design is divided into five phases:

- a. High-level system design
- b. Preparation of high-level system design proposals
- c. System evaluation
- d. Preparation of final report of high-level system design
- e. Detailed system design
- f. Preparation of final report of detailed system design.

High-level system design. In the development of an information system, system analysis has obtained the following information from the system analysis stage conducted: a. Information needed by users along with inherent requirements in that information b. System scope c. Resources owned by the company including human, machine, money, materials, and methods. Based on the information obtained in this analysis stage, system analysis then offers various high-level alternative designs of information systems to produce the information needed by users. These alternative designs of information systems consist of designing each building block of the information system, including output design, input design, model, technology, database, and control.

Preparation of high-level system design proposals. General design proposals are prepared to communicate in writing to information users how the designed information system can broadly meet their information needs. **System evaluation.** In the system analysis stage, system analysis determines the requirements that must be met by the technology block in explaining the designed information system and selects technology vendors capable of meeting the requirements demanded by the information system. **Preparation of general system design results report.** Based on the results of discussions between information users and system analysts in presenting general design proposals and system evaluations, system analysis then creates a "general system design final report".

Detailed system design. In this stage, system analysis performs detailed designs for each building block of the information system to become a system capable of meeting the information needs of users. **Preparation of detailed system design final report.** The detailed design results of the information system are presented by system analysis in a written document called the "final detailed system design report".

SYSTEM IMPLEMENTATION In this implementation stage, the system analyst prepares the final implementation report consisting of two parts: Implementation Plan and Implementation Execution Results. **System Implementation Preparation.** System implementation is highly determined by the planning made for executing the system implementation. Even though the accounting system has been well designed, its successful development heavily depends on how well the planning and execution of the system implementation are carried out. **Employee Education and Training.**

Training employees who will operate the accounting system. The employees operating the system include those responsible for preparing inputs, processing data, and operating and maintaining the physical and logical components of the accounting system. The training is aimed at preparing the employees to face the initial operation of the system. However, training does not stop there. **System Conversion.**

The transition from the old system to the new system requires a specific conversion approach. There are four approaches used to change from the old system to the new system:

- a. **Direct Conversion.** Direct conversion is the immediate implementation of the new system and the immediate cessation of the old system's use.
- b. **Parallel Conversion.** Parallel conversion is the simultaneous implementation of the new system alongside the use of the old system for a certain period.
- c. **Modular Conversion.** Modular conversion, often referred to as the pilot project approach, is the partial implementation of the new system within the organization. For example, the new accounts receivable system is applied

in Branch A, and if successful, implemented in Branch B, and finally, if successful in both branches, will be implemented across the entire company.

d. Phased Conversion. Phased conversion is similar to modular conversion. The difference between the two is that modular conversion divides the organization for the implementation of the new system, while in phased conversion, the system itself is divided.

4. Conclusion

Based on the results of this study, we emphasize the importance of selecting the appropriate information system development method before initiating the development process. This decision is crucial to ensure that the resulting system meets user expectations. The variety of available software development methodologies and models often makes it challenging to choose the most suitable one for specific situations or work environments. Additionally, this study shows that every stage of system development, from initial analysis to implementation, requires clear and detailed written documentation.

This documentation is essential for communicating the work plan and findings to information users. Effective information-gathering techniques, such as interviews, questionnaires, and observations, also play a vital role in the success of system analysis. System design and implementation require careful evaluation and thorough planning, including employee training to ensure a smooth transition from the old system to the new system. Various system conversion approaches, such as direct, parallel, modular, and phased conversions, should be considered according to the organization's needs. Overall, this study highlights that good planning, the right methodology selection, and organized execution are key to successful development and implementation of effective information systems.

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