Accounting Information System Development End-user-based for Improving Digital Business

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Abstract. This study aimed to determine the end user's role in system strategy, conceptual design and system selection for the successful development of accounting information systems at PT. Radik Jaya, Indonesia and to know the supporting factors and constraints for the development of accounting information systems in PT. Radik Jaya Indonesia. The research method used was qualitative with a case study approach. Data was collected with observation and in-depth interviews directly with key sources of information (CFO, Financial staff, HR and general staff), documentation, credibility, and source triangulation. Taxonomy was used as the data analysis method. The result showed that the roles of the user to determine the success of the development of accounting information system at PT. Radik Jaya Indonesia. These roles include the user's role in system strategy, conceptual design, and system selection. The role of users in the system strategy was to provide information and proposals related to the features carried out the development of accounting information systems in order to run effectively. The role of the user in conceptual design was to ensure the design of the accounting information system in accordance with the PSAK and in accordance with the description of the information provided in the process of designing the system strategy. The selection of the system was done in detail, the user plays a role in the selection of the system by paying attention to the features that have been applied in accordance with the operational needs of the company's work and business. The information presented displayed well. The client guarantees the costs caused by the organization during the time spent fostering the bookkeeping data framework as per the plan that has been made.

Keywords: User Role, System Strategy, Conceptual Design, System Selection, Accounting Information System Development.
INTRODUCTION

Information systems in the business world play an important role in helping various forms of activity. Information systems have been created with the aim of performing repetitive workflows, the work could be done quickly (Ma'mur & Nurmaswan, 2019). Information systems applied in this way at work will provide adequate information for the company. One of the most important of information produced by companies is accounting information. In the following process, a system called an accounting information system is required to ensure the accuracy of providing accounting information.

Companies in any line of business can certainly have different needs for accounting information. The business activity of the company, which has increased in the process, affects the improvement in the presentation of transaction data. As a result, an increase in the number of transactions leads to a bunch of data that must be recorded and presented by the financial staff / staff. This is used as an incentive for the company to develop an accounting information system in line with the company's operations in order to overcome the accumulation of transaction data that needs to be recorded and presented. Similarly, PT. Radik Jaya Indonesia, which develops accounting information systems based on the activities of a company that business volume has increased in the last 1 year with the period 2019-2020.

The development of accounting information systems in companies is considered successful because it is influenced by several factors. Users in this case, as users of the system, become one of the factors determining the success of the system being developed. Top management support during the development of an accounting information system is also a factor that can contribute to the success of the development process. The users, in development process, guarantee that the developed system will meet work targets (Pratama & Sediyono, 2017). The involvement of users of accounting information systems can be considered from three aspects of their roles in the process of managing the development of an accounting information system. The roles are the form of system strategy, conceptual design, and system selection to manage the development process (Hall, 2007).

The study of the accounting information systems development, such as the impact of the use of information technology and user involvement, helped to improve the effectiveness of accounting information systems (Sukmawati & Nugroho, 2017). Mahardika & Suardikha (2018) found that user involvement in the information systems development process had a positive impact on the effectiveness of accounting information systems. Other factors that have a positive impact on the effectiveness of accounting information systems were personal technical skills, support from senior management, formalization of the development of information systems Yusriwarti (2016).

Arif (2013) argued that developing an online accounting information system helped small businesses process transaction data, the work has been done flexibly. Haryanti (2014) explained that the involvement and participation of accounting information system users in the system development process actually increased user satisfaction with the developed information system. Nurbatin and Lestari (2018) showed that developing an accounting information system and information needs model led to more accurate financial reports. Research by Taufik (2019) has led to the development of an integrated accounting information system was useful for companies winning business competition to be accurate and fast. Pratama & Sediyono (2017) explained that a user role showed the results of an accounting information system designed according to the required
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objectives. Research on the impact of product knowledge and perceived quality on purchase intent has also been done by previous researchers.

Kusuma and Untarini (2014), found product knowledge had a positive and significant impact on purchase intention. Research by Hidayati (2014) showed that product knowledge had a positive and significant impact on purchase intention. A follow-up study by Riyadi (2015) found that perceived quality has a positive and significant impact on purchase intention. Another study by Firmansyah (2016) showed that product knowledge and perceived quality had a positive and significant impact on purchase intention. A follow-up study by Putri (2017) showed that perceived quality had a positive and significant impact on purchase intention.

The results of previous studies have focused on factors affecting the performance of accounting information systems, development of the system focused on business development and user involvement in the system, satisfaction with the development of accounting information system. This study focused more on the role of users of accounting information systems in terms of system strategy, conceptual design, and system selection for the successful development of accounting information systems. This study was to define the role of the user in system strategy, conceptual design, and system selection for the successful development of accounting information systems, and to identify the factors that support and hinder the development of accounting information systems in case studies at PT. Radik Jaya Indonesia.

LITERATURE REVIEW

1) System Development Life Cycle

An accounting information system (AIS) was the process of identifying, collecting and storing data, as well as the process of developing, measuring and communicating information to inform decision makers (Romney & Steinbart, 2016). Hopwood & Bodnar (2010); Diana and Setiawati (2011)certained the accounting information systems was as various kinds of resources in the form of people or equipment that are willing to transform financial data or the like into useful information for their users.

AIS development usually follows the SDLC (System Development Life Cycle) theory. The SDLC had stages or phases that were essential and necessary in its activities. These stages were interconnected from start to finish. In general, SDLC had 5 stages (Romney & Steinbart, 2016):

1. System analysis (System analysis)

   The first step in system development was system analysis, which was the information needed to make a decision to purchase, develop, or modify a system. This stage was carried out by understanding the needs of the company's business and analyzing the existing system. The information requirements of users and system managers were defined as the system requirements used to select or develop a new system.

2. Concept design

   At this stage, the company analyzed how to meet the needs of users, then determined and evaluated the corresponding projects and developing specifications were for what the systems and management processes achieve.

3. Physical design

   The next step in the SDLC was to explain in detail the requirements of the blueprint that the user considered to test the software that would be used in the company.
4. Implementation and transformation

The system design from the previous steps, then, were implemented and tested. This stage could also be called the deployment stage. Important points to consider when implementing the system were:

a. Transformation
   The conversion was performed from the old system to the new system, especially if you have previously used a computerized application.

b. Training
   Conducting training for parties who used the system and conduct socialization for parties involved in the system but not directly using the application.

c. Admission test
   Testing was done over a period as a learning process and to ensure that the system was working properly.

5. Operation and maintenance of the system

The system maintenance phase covered the entire process to ensure and maintain the productive operation of the system throughout its life.

2) User roles

User participated in SDLC management as members of the development team. The role of the user may extend not only to a member of the development team, but also to the implementation of accounting information system applications. Users of accounting information systems such as accounting, finance or other related personnel, including superiors (manager or director level). The roles of these users include Hall (2007); Romney and Steinbart (2016):

1. The role of the user in the system strategy

   The strategy of the accounting information system was a factor that determined the direction and goals of the developed accounting information system. Accounting information system strategies included (Tyoso, 2016):
   a. Information needs: types and characteristics
   b. Compliance of information with the objectives of the organization to be achieved
   c. Information flow rate
   d. Economic value of information
   e. Cost limitation
   f. Structure of information users

   The system strategy aimed at linking the implemented system project with the goals of the company. The system strategy should be reviewed regularly to avoid unwanted risks. Careful system planning also revealed cost-effective actions to reduce unnecessary costs. The systems strategy would provide an overview of the approach to the strategic development of systems within a company. Users of accounting information systems played a role in system strategy planning in the development of accounting information systems by providing information related to what users needed when developing strategies to improve the efficiency of a company's operations after the implementation of the system.

2. The role of users in conceptual design

   The conceptual design aimed to create multiple systems that have been identified as alternatives through systems analysis. Presenting a reasonable number of system alternatives was used to avoid the expected limitations of the new system. Performing the conceptual design of the accounting information system development process as a collaborative effort between organizations and systems specialists. Users played a role in
the design of the system being developed and are responsible for the conceptual design of the system.

Users of the conceptual system should be familiar with the controls of each system and comply with the accounting rules and applicable legal requirements, and ensure that Indonesian accounting standards are taken into account when designing the development of accounting information systems (Oktavia, 2013). In addition, users of accounting information systems should ensure adequate control and attention to elements of alternative systems during the detailed system design phase.

3. The role of the user in choosing a system

The considerations for users to choose an accounting information system for use in companies were based on the following (Risna, 2019):

a. By identifying business needs, users of accounting information systems helped define the processes and implementations of systems in the company, taking into account the business needs that arise in the company.

b. Adjusting the budget, the costs incurred by the company in the process of developing an accounting information system must take into account the special budget set by the company so as not to affect the financial reporting process.

c. Securing system, stored information data must be protected and their security guaranteed. The system chosen must have the same security as the bank in the company's data protection.

d. Processing tax transactions, a good business actor, one of the characteristics was obedient to taxes. The selected accounting information system could help with tax reporting, no need for other employees to prepare reports.

Users made sure that the accounting information system chosen during the development process helped in the performance of the work. It was expected that the system implemented in the company effected the sustainability of the company's activities and had benefits.

RESEARCH METHOD

1) Study Design

This type of research was qualitative research, it used to study the state of objects of science, in this case the researcher is the key tool (Sugiyono, 2017). The determination of the source of data about the respondents in this study was carried out purposefully and avalanche-like, which was determined by certain criteria and considerations. In this study, the analysis design consists of a deeper assessment and development of the accounting information system application case and the role of its users in the development process. This study was conducted using case study. The study in the form of analytical plans found in the field (Creswell, 2016).

2) Data collection through interviews

The researchers conducted direct interviews (face-to-face interviews) with predetermined sources. In this study, direct and in-depth interviews were conducted with informants (users of accounting information systems) on PT. Radik Jaya Indonesia to learn more about the phenomena related to the development of accounting information systems. Resource persons consisted of the head of the finance department, the personnel department and the general staff, financial personnel.

As a result of interviews with the resources, data validation material was be done. Data validity also achieved through the use of reference materials as support to validate the data that have been collected through the results of the compilation of response
matrices (verbatim) and previous research journals. Data transmission value of this study, as a following step, put in the study report, which was described in detail, clearly, and systematically. This processing data was for Data Credibility. The results of the interviews were abstracted to search for keywords in accordance with the focus of the study, namely the role of users for the successful development of accounting information systems.

3) Analysis Technique

Applications Word cloud, and Atlas.ti were employed to do analysis data. Furthermore, reducing data meant summing up, there was a lot of data received from the field. Data collected were needed to be chosen carefully and detailed in selecting the main thing and focusing on topics and patterns. Thus, the reduced data gave a clear picture. The next step in qualitative data analysis was drawing conclusions and validating them. Initial findings were still preliminary and may evolve if there was no strong evidence to support early stages. This finding may be in the form of a description or description of an object that was previously obscure, then research was carried out to make it clear. The evidence was valid and consistent, when the researcher returned to the field to collect data, then the conclusions drawn were credible conclusions.

FINDING AND DISCUSSION

1) Research Result

a. User Role in System Strategy and Conceptual Design

The supervisor in the company was responsible for defining the system strategy and conceptual design in the process of developing an accounting information system. Planning an adequate system strategy was as it is one of the factors that determined the success of the accounting information system development process. The system strategy must be needed to be taken into account during process of developing an accounting in order to obtain new system as it was designed.

That referred to the costs incurred by the company, which must be taken into account when preparing a system strategy and conceptual design for the development of accounting information systems. In addition, the preparation and reports resulting from the use of the system to be applied to the company and the storage of the company's data to improve its security were also a challenge in preparing the strategy and design of the system during the development process.

Accounting information system user departments and staff in companies collaborate with systems specialists to provide information that is needed during the development process. Involving users in the preparation of strategy and system design was one of the right alternatives to support the success of the development of accounting information systems. The users who would implement the system due to users have the opportunity to choose the appropriate system design according to their work needs. The collaboration between users and systems specialists in formulating the strategies and projects according to designed process to ensure that the resulting accounting information system related to users, and their jobs.
The development of an accounting information system that met the needs of the company and was carried out in accordance with the procedures and processes, created a safe, simple and accurate system. The work could be done quickly, of course, it had an economic cost to consider when developing a system strategy. Systems that have passed the economic age must be upgraded in order to the system may still be used and work properly. This corresponded to the depiction of the user role model in the system strategy and blueprint in Figure 1.

**Figure 1 User Role in System Strategy and Conceptual Design Model**

b. User Role in System Selection

The selected accounting information system created a system that was user-friendly and beneficial to the company. The process of maintaining a simple and cost-effective system was also an important factor for a company to consider when choosing an accounting information system to use.

Operational work, using the new capabilities of accounting information systems that have passed the development process, became more efficient. Users of accounting information systems who would directly use the system, when choosing a system, must make sure that the used functions corresponded to what was needed in their work. In addition, the role of the user during system selection could minimize the risk of errors occurring in the company's financial reporting process, the information presented properly obtained. Users of accounting information systems had a role to play in ensuring that the costs incurred in the development process were consistent with the designs developed. Records of the company's accounting information system development
process should be properly recorded in the company's archives. This corresponded to the depiction of the user role in the System Model Selection section in Figure 2.

![Figure 2 User Role in System Model Selection](image)

**c. User Role in Development Process**

The director of the company led and directed the process of developing an accounting information system carried out by the company. The process of developing an accounting information system also involved the role of competent system users belonging to the company. The user was involved in the development process in such a way that when introducing the accounting information system into the workflow, the user did not have any difficulties in adapting to the new system.

The development process was carried out according to existing procedures and stages and is carried out step by step. Changes in accounting information systems were necessary and adapted to the needs of users and the activities of the company. This corresponded to the development model process depicted in Figure 3.

![Figure 3 User Role in Development Model Process](image)
d. Supporting Factors

The factors supporting the process of developing accounting information systems in companies are:

1. Top management support

Development of accounting information systems in PT. Radik Jaya Indonesia, which was carried out on the basis of the strategic goals of the company, had the full support of the directors and managers of the company. The support provided by the director and his staff during the development process was an important factor for the successful development of an accounting information system. The form of support provided was sincere attention to ensure that the system development committee had confidence in the development of an accounting information system. If top management provided such support, it would lead to a positive attitude of the committee to complete their tasks in a timely manner in accordance with their goals, they accomplished successfully of the accounting information system development process in the company.

2. Direct participation of users of the Accounting Information System

Users of accounting and information systems who were participated directly in the process of developing an accounting information system actually led to a desire on the part of users to feel more involved in the development system. The involvement of competent users in the development process by providing the necessary information as an auxiliary factor in the development of an accounting information system. It turned out that users involved in system strategy development, system design and selection made it easier for users to understand the applied accounting information system. Users optimally used the developed accounting information system.

3. Implementation of a phased development of an accounting information system

The process of developing an accounting information system, which was carried out according to stages and procedures, and not just copying the accounting information system from other companies, was one of the development processes supporting factors. The development of an accounting information system required adaptation to the situation and conditions of the company associated with the operational work of system users.

e. Obstacle factors

The emerging restrictions were normal in any process of activity, including in the process of developing a system of accounting information. Limitations or factors that became obstacles to the development process as follows:

1. Human resources

Obstacles that arised in the process of developing an accounting information system on the PT. Radik Jaya Indonesia was the human factor as an executor of the development. The number of human resources in a company was not proportionally to the work-loads to be done. A disproportionate number of workers created multiple tasks at work. This became an obstacle to the smooth process of developing an information system for planned accounting.

2. Cost Considerations

The costs that must be incurred in the process of developing an accounting information system, it was necessary to take into account. The costs incurred by the company for the maintenance of office equipment, heavy equipment and the rental of vehicles to ensure the activities of the company were very high. The allocation of costs incurred for the development of an accounting information system was less budgeted.
and slightly delayed. The cost factor was one of the problems hindering the process of developing an accounting information system.

3. Time Allocation

The reset of tasks due to the number of workers not balanced with the work that needed to be done affected the time frame that was planned to complete the development of accounting information systems. The process of developing an accounting information system took a lot of time to discuss from careful planning, development stages to implementation of an accounting information system. The time devoted to discussing the development of accounting information systems was not enough. This was a constraint in the development of accounting information systems in the company.

2) Discussion

This research on the role of users in the successful development of accounting information systems would be discussed as follows:

a. User Role in System Strategy

A study by Suhatman (2018) stating that users, as members of the strategic planning and system requirements group, conducted research on business functions and information that influenced the system being repaired. The developed system has led to an increase in the quality of information for better decision making.

The results of this study, based on the above description, supported Suchatman's research, namely, system users in a company could be used as team members to provide users with the ability to provide information used in planning the development or adjusting system strategies in line with development, science, and technology; and in the business environment changes.

b. User Role in Conceptual Design

The conceptual design of the new system has been prepared on the basis of information obtained from predefined recommendations. The users formulated the details relating to the new system and they defined the system design inputs and outputs and other procedures necessary to develop the system. This was supported by a study of Ningtyas, Halim, & Puspito (2019), which mentioned the role of users in the development of conceptual designs in the process of developing an accounting information system, which generally and logically gave a clear picture of the needs of system users and they determined how the designed system, what tasks to be done.

c. User Role in System Selection

The role of the user was to ensure that the costs incurred for the selected system associated to the company's budget and that system maintenance was properly controlled. Users of an accounting information system, in the process of selecting the system to be developed, they also ensured that the functions of the system were applied appropriately for the operational needs of the company. Users of accounting information systems who participated in the selection of the system would create a system which helped the workflow to be efficient. This was in line with the study by Rukmiyati & Budiartha (2016), which stated that the system chosen should be adapted to the company's operational processes, due to if the accounting information system was not suitable, it would cause difficulties for users of the system in carrying out their work.
CONCLUSION AND RECOMMENDATION

This study produces conclusions based on the results of the research and discussion above as follows:

1. The role of the users determined the success of the process of developing an enterprise accounting information system. Users of the system who made suggestions to create information related to the features to be implemented as a contribution to the development process. The conceptual design was developed with a design that matched the information provided by the user. The system users warranted that the design was made as the system user description and it was accordance with PSAK. In addition, the role of the user in choosing an accounting information system was that the selected system contains features to help met the operational needs of the company. The information provided by the users would be well received and ensured that the costs incurred by the company were in accordance with the design, which was made.

2. Factors supporting the company in the development of accounting information systems, namely support from top management, direct involvement of users of accounting information systems in the development of accounting information systems and the gradual development of accounting information systems. Factors hindering the process of developing an accounting information system that were faced included the human resources owned by the company that were not commensurate with the work to be done, accounting for the costs that must be incurred in the process of developing an accounting information system. The time needed to develop an accounting information system had not a sufficient proportion.

REFERENCES


Sari, N. Z. (2018) Pengaruh Strategi Bisnis, Metoda Pengembangan Sistem (System Development Life Cycle), Terhadap Kualitas Sistem Informasi Akuntansi (Survei...
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Pada PT Len Industri Persero-BUMN Industri Strategis Di Indonesia) . Sosiohumanitas, hal. 176-190.


