

# The Effect of Information Technology on the Quality of Accounting Information system and Its impact on the Quality of Accounting Information

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## Abstract

This study aims to explain, not to test empirically, the influence of information technology (functionality, ease of use, and compatibility of technology that adhere to accounting information system) on the quality of accounting information system (reliability, timeliness, flexibility, usefulness and sophistication) and its impact on the quality of accounting information (relevance, accuracy, and completeness) in order to develop a theoretical framework as a basis for the hypothesis, as an answer to the research questions, namely: (1) how is the effect of information technology on accounting information system (AIS) and (2) how is the effect of the quality of accounting information system on the quality of accounting information. This study will use  $\alpha = 0.05$  to test each hypothesis. This study is scheduled to be conducted in university, institute and polytechnic in Bandung. The research methodology used in this study is also described in this paper.

**Keywords** : Information Technology, Quality of Accounting Information system, Quality of Accounting Information

## 1. Introduction

Economic globalization began in the 1990s has pushed global competition (Bentley & Whitten, 2008). This competition creates new business environment that requires companies to be more responsive to problems and opportunities exist (Turban et al, 2008). To succeed in the competition, companies must be able to adapt to it (Turban et al., 2008). Adaptability in the competition will have a major impact on the increasing value of information for the company, where this information can be the basis for the development of products and services in the company (Laudon & Laudon, 2005).

Information is the result of data processing that gives meaning and benefits (Azhar Susanto, 2008). Data that has been processed and arranged so that it can give meaning to the user is called information (Romney et al, 2009). Furthermore O'Brien & Marakas (2011) revealed that information is data that is used by companies as a basis for decision-making, where the data are raw facts which may represent measurements or observations of objects and events that are then transformed into useful information for decision makers. A similar point was expressed by Stair & Reynolds (2010) who stated that data consists of raw facts that are processed and organized to become information, while information is a set of facts that is processed based on certain way so that it gives an added value for the company.

Accounting is an information system that identifies, records, and communicates the economic events of an organization to the users (Weygandt, 2008). Accounting is a system that collects and processes (analyzes, calculates and records) financial information about an organization and also reports that information to decision makers (Libby & Robert, 2008). Therefore, business transaction or accounting is basically the selection of all economic activities into activities that relate only to a business organization; other economic activities that are not related to it are excluded (Azhar Susanto, 2008). The business transaction is then put into a form (on a piece of paper or on computer screen) so that it becomes documents or data to be further processed into information or accounting information.

Internal parties in companies such as marketing managers, production unit supervisors, finance directors and other officials need accounting information to support activities done, for example setting up and running the company and also assisting other internal parties in making decisions for the company (Weygandt et al., 2008). Furthermore, Weygandt et al. (2008) stated that the external parties needing the accounting information are investors and creditors who need this accounting information to evaluate the risks of granting credit or lending money to the internal parties.

The important role of information for organization makes organization becomes highly dependent on information system/accounting information system (Azhar Susanto, 2008). Information system is a set of formal procedures that determine how data is collected and processed into information and distributed to the users (Hall, 2008). Information system provide information in the form of reports that can be used by internal and external parties (O'Brien & Marakas, 2008).

Accounting information system is a set of components that collects accounting data and processes the data for the benefit of users (Bagranoff, 2010). Accounting information system is a specialized subsystem of the information system, in which the purposes of accounting information system are to collect, process, and report information related to the financial aspects of business activities (Gelinias, 2005). Meanwhile, Hurt (2008) explained that accounting information system is a set of interrelated activities, documents, and technologies designed to collect data, process, and report information to various internal groups and external decision-makers within the organization. Accounting information system is a computer-based system that is designed to transform accounting data into information (Bodnar & Hopwood, 2006). A similar point was expressed by Bagranoff et al. (2010) who stated that accounting information system is a data collection and processing procedures that generate the needed information for users. It can be concluded that the essence of accounting information system is a set of components that collect, record, store, and process data to produce information for decision makers (Romney et al, 2009).

Three functions or roles of accounting information system are to support the company's day-to-day activities, to support the decision-making process, and to assist the company in meeting its responsibilities to external parties (Azhar Susanto, 2008). These roles of accounting information system in the company can give added value for users in the form of the provision of financial information for planning, controlling, and decision making of the company, which ultimately can improve overall company performance, namely financial performance and non-financial performance (Romney & Steinbart, 2009).

The low quality of information system in companies in Indonesia was revealed by Hoesen (2012) who stated that Indonesia Stock Exchange (IDX) said that there were 29 companies late in submitting financial reports in the second quarter of 2012 (Antaraneews.com, 2012). Meanwhile, according to Edy Sugito (2011), there were about 25% of semi-annual financial statements in 2011 not complying with the Statement of Financial Accounting Standards. It was caused by the issuers that prefer the performance of the financial statements book, while actually it ignores accounting principles (Akuntanonline.com, 2011).

The quality of accounting information system is influenced by information technology, business strategy, and organizational culture (Romney & Steinbart, 2009). Meanwhile, Laudon & Laudon (2012) stated that the effectiveness of the use of information system requires an understanding of the organization, management, and information technology. Information system and technology are essential components of organization's business success. The success of an information system should also be measured by the effectiveness of information technology in supporting the organization's business strategy (O'Brien & Marakas, 2008). In addition, Bagranoff (2010) revealed that information system and technology are business tools used by companies to find, save, and change the information.

The use of information technology has begun to use computer as a tool of data processing (EDP = Electronic Data Processing), so that the speed and accuracy of processing get better (Azhar Susanto, 2008). EDP is the use of computer technology to carry out a processing of transaction data in one organization. EDP is a fundamental application for accounting information system in any organization. Along with the development of computer technology, which is more widely known by the public, the term Data Processing (DP) now has the same meaning as EDP (Bodnar & Hopwood, 2006). Information system is developed to support the business activities at all levels of the organization. Therefore, the information system must be accepted and used by all employees in the organization (Laudon & Laudon, 2005). The users of an enterprise information system consist of internal and external users. Internal users of the information system will use the information as a basis for decision making (Azhar Susanto, 2004).

Turban et al. (2008) revealed that information technology is a collection of computing systems used by the organization. Furthermore, Turban et al. (2008) stated that information technology refers to part of an information system consisting of hardware, software, databases, networks and other electronic devices. Information technology is a physical component that consists of hardware, software, and networks, which form the system information (Huber et al., 2008, Stair & Reynolds, 2010, Laudon & Laudon 2012). Components of information technology interact to collect, process, store, and provide the information needed to support the decision of an organization (Bentley & Whitten, 2008). Information technology has been able to reduce the steps in the accounting cycle (Hurt, 2008). While Bagranoff (2010) stated that information technology serves as a tool, in which the components of multiple systems integrate each other. Subsequently, Bagranoff (2010) revealed that information technology consists of five components that can support the successful implementation of accounting information system. These components are hardware, software, data, people, and procedures.

Information technology issues in Indonesia, according to Hermawan Hosein (2011) were the quality of network in Indonesia that has not been able to keep pace with the development of e-trading that led to the frequent occurrence of data packet loss, and the network degradation is not conducive to the transactions that require timeliness (swa.co.id 2011 ). Liam Maxwell (2012) stated that communication service providers face greater challenges in terms of management and the ability to process and analyze data to support the decision-making

process timely (swa.co.id, 2012). Richard Kumaradjaja (2009) stated that the use of information technology in the management of human resources (HR) is increasingly critical and mostly not integrated and not producing accurate data (bisnis.com, 2009).

The purpose of this study is to develop a model to find out evidences or answers of the following problems: (1) how is the effect of information technology on accounting information system (AIS)? and (2) how is the effect of the quality of accounting information system on the quality of accounting information?

## **2. Review of Literature**

### **2.1. Accounting Information Quality**

Quality means the ability of a product (including services) to meet or exceed customer expectations (Stair & Reynolds, 2010). Quality is a fit between the required specifications compared to specifications generated (used) by a company (Azhar Susanto, 2004). Meanwhile, the quality of information is produced by the quality of accounting information system (Laudon & Laudon, 2005). High quality information is used by users to plan, control, and operate the company (Salehi et al, 2010).

High quality accounting information is information that can help users to perform the expected action (Hall, 2011). In addition to the integrated or a solid organization, quality information will improve the quality of managers understanding on the organization to see the changes that occur both within and outside the organization, so that the managers will quickly and accurately respond to the changes (Azhar Susanto, 2008).

Users need high quality information because it will increase the value of the decision to be taken by the company (O'Brien & Marakas, 2011). High quality information is information that is accurate, reliable, current, complete, and delivered in the proper format (Stair and Reynolds, 2010). Meanwhile, according to Laudon & Laudon (2012), high quality information has the dimensions of: accuracy, integrity, consistency, completeness, validity, timeliness, and accessibility. Meanwhile, Hall (2011) stated that the high quality information has the characteristics of: relevance, timeliness, accuracy, completeness, and summarization. Quality of information according to O'Brien & Marakas (2008) is grouped into 3 (three) dimensions, namely: (1) Time dimension: timeliness, currency, frequency, and time period, (2) Content dimension: accuracy, relevance, completeness, conciseness, scope, and performance, (3) Form dimension: clarity, detail, order, presentation, and media.

### **2.2. Quality of Accounting Information System**

A system is a set of two or more interrelated components that interact to achieve a goal. Systems are almost always composed of smaller subsystems, each performing a specific function which is important to and supportive of the larger system (Romney & Steinbart, 2009). According to Hall (2011), a system is a group of two or more interrelated components or subsystems that serves a common purpose. Furthermore, O'Brien & Marakas (2008) revealed that an information system depends on the resources of people (end users and IS specialists), hardware (machines & media), software (programs & procedures), data (data & knowledge bases), and networks (communications media and network support). Laudon & Laudon (2012) stated that an information system can be defined technically as a set of interrelated components that collect (or retrieve), process, store, and distribute information to support decision making and control in an organization.

Accounting information system is a set of components that collect accounting data and process the data for the benefit of users (Bagranoff, 2010). Accounting information system is a special sub-system of information system, in which the purpose of the accounting information system is to collect, process, and report information relating to the financial aspects of business activities (Gelinas, 2005).

Hurt (2008) explained that accounting information system is a set of interrelated activities, documents, and technologies designed to collect data, process, and report information to various internal groups and external decision-makers within the organization. Accounting information system is a computer-based system that is designed to transform accounting data into information (Bodnar & Hopwood, 2006). A similar point was expressed by Bagranoff et al (2010) stating that accounting information system is a data collection and processing procedures that produce information necessary for the user. It can be concluded that the essence of accounting information system is a set of components that collect, record, store, and process data to produce information for decision makers (Romney et al, 2009).

Quality of information system can be expressed by 5 (five) attributes, namely adaptability, availability, reliability, response time, and usability (De Lone & Mc Lean, 1992.2003). This is similar to that presented by Zaied (2012) that quality of a system can be measured with dimensions namely reliability, usability, adaptability, trust, and maintainability. The measurement of quality of information system can be done by using 9 (nine) dimensions, namely ease of use, ease of learning, user requirements, system features, system accuracy, flexibility, sophistication, integration, and customization (Sedera and Gable, 2004). Meanwhile, Romney & Steinbart (2009) argued that the success of an accounting information system can be based on the characteristics of usefulness, economy, reliability, availability, customer service, capacity, ease of use, flexibility, tractability,

audit ability, and security. Besides that, accounting information system success can be measured with accurate, timely, and relevant dimensions (Laudon & Laudon, 2012).

Gorla et al. (2010) classified attributes of system quality into two major categories, namely the system feature of the system designer's perspective (flexibility system) and the system feature of the end user's perspective (sophistication system). The flexibility system dimension consists of (1) information system is easy to learn, (2) equipped only with useful features and functions, and (3) flexible to make changes easily. Sophistication system dimensional consists of (1) information system is applied modern technology, (2) well integrated, (3) user-friendly, (4) good documentation, (5) short response time for on-line inquiry, and (6) short time lag between the data input and output for batch processing.

Meanwhile, Seddon and Kiew (1994) stated that the successful implementation of accounting information system is the use of the system (system use), the use of accounting information system to help resolve day-to-day work. The successful implementation of an accounting information system is user satisfaction, which is a level of usefulness of accounting information system for the users (Kettinger & Lee, 1995 and Thong and Yap, 1996). Meanwhile, Gelderman (1998) revealed that the successful implementation of information system accounting is the intensity of the use (intended use) of the accounting information system in daily work and the satisfaction of users (user satisfaction) for the use of accounting information system. Successful implementation of accounting information system is user satisfaction and intention to use the system usage (Straub et al 1995).

### **2.3. Information Technology**

Bagranof et al (2010) stated that information technology (IT) refers to the hardware, software, and related system components that organizations use to create computerized information system. Information technology refers to the technological side of an information system. It includes the hardware, software, databases, networks, and other electronic devices (Turban et al, 2008). Whereas, Bagranoff et al. (2010) stated that information technology (IT) serves as a platform where components from other system integrate one another. It is helpful to view an accounting information system as a set of five interacting components, namely hardware, software, data, people, and procedures. These items must interact with all components of the other system to create successful AISs”.

Wilkinson et al. (2000) revealed that information technology includes mainframe computers, minicomputers, microcomputers, software, data, bases, networks, the internet and intranet, electronic commerce, and a variety of related technologies. Stair & Reynolds, (2010) stated that information technology component consists of hardware, software, a database, telecommunications, networks and procedures.

The characteristics of information technology are functionality, ease of use, compatibility and maintainability (Thompson & Baril, 2003). While Laudon & Laudon (2012) revealed that the technology specification is a specification that can be used to improve the compatibility and to increase communication (ability to communicate) in the network used. While the main reason for the use of information technology in business is to support, so that information system may operate well (O'Brien & Marakas, 2004).

## **3. Theoretical Framework**

### **3.1. Information Technology and Quality of Accounting Information system**

The quality of accounting information system is influenced by information technology, business strategy, and organizational culture (Romney & Steinbart, 2009). Meanwhile, according to Laudon & Laudon (2012), the effectiveness of the use of information system requires an understanding of the organization, management, and information technology. Information system and technology is a business tool used by companies to find, save, and modify information (Bagranoff, 2010:8). Meanwhile, O'Brien (1996) states that the reasons for the use of information technology in business is to support information system in performing its roles, namely: (1) support of business operations, (2) supporting of managerial decision making, and (3) support of strategic competitive advantage.

Information system provides information in the form of reports that can be used by internal and external parties (O'Brien & Marakas, 2008). While Stair & Reynolds (2010) argued that the ability of information system to manage information is the basis for the organization for decision-making. According to O'Brien and Marakas (2010), performance of information system is affected by factors such as infrastructure, technology, and information technology organizations. The measure of success in managing the function of information technology is determined by effectiveness, efficiency, and economical value of the function of information technology.

The effect of information technology on the success of accounting information system is also demonstrated in numerous studies. Hussein et al. (2007), in his study about the effect of information technology on the success of electronic information system in government organizations, found that technological factors are very important in ensuring the success of the use and application of accounting information system. He also explained that all technology factors (information system facility, competencies of information technology staff, information

system integration, user support, and structure of information system) used in the study significantly influence the success dimensions of accounting information system (system quality, information quality, perceived usefulness, and user satisfaction). Among the factors above, technology, staff competency factors, and facility information technology system are the most decisive factors in ensuring the success of the accounting information system, which is then followed by the integration factor.

A study of Ismail & King (2007) that examined the relationship between the factors of technology (information technology maturity level, the level of knowledge of the owner/manager of accounting and IT, the level of commitment of the owner/manager, and the use of expert government agency) and unification of the company's accounting information system in the small and medium enterprises in Malaysia concluded that the dimensions of information technology maturity level, the level of knowledge of the owner/manager of accounting and IT, the level of commitment of the owner/manager, the use of expert government agencies and public accounting firms, the size of the company, and the existence of IT personnel are factors related to union/alliance (alignment) of accounting information system.

### 3.2. Accounting Information system Quality and Accounting Information

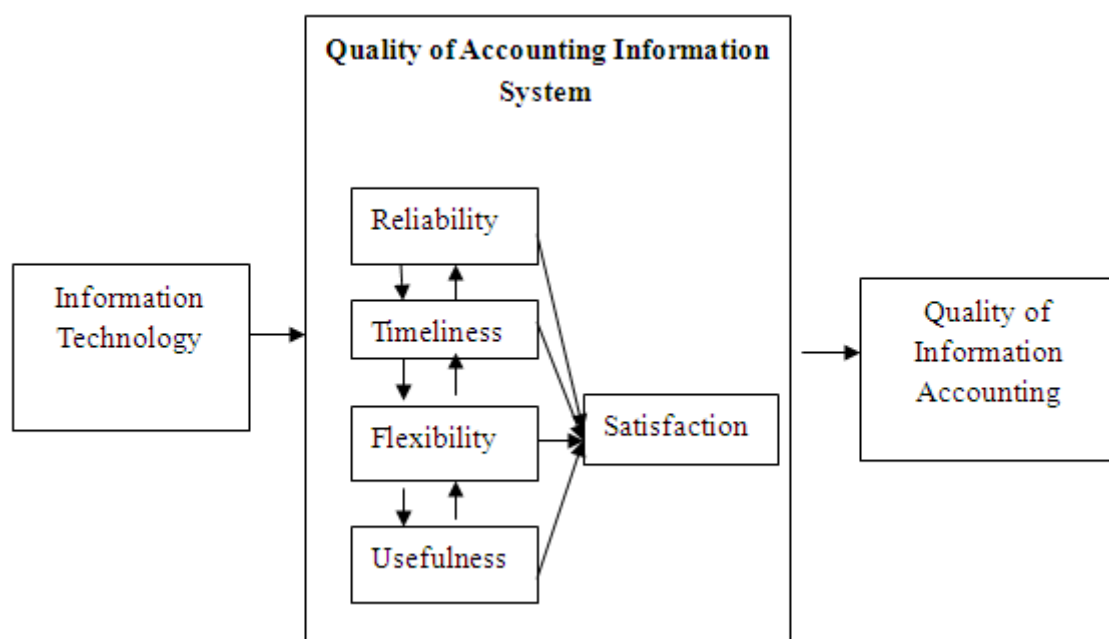
According to Bentley & Whitten (2008), information system in organization has a goal to process data to produce useful information in supporting organization's transactions. Information system provides information in the form of reports that can be used by internal and external parties (O'Brien & Marakas, 2008:15). Ability of information system to manage information is the basis for the organization for decision-making (Stair & Reynolds, 2010:3).

Information system is a collection of human resources, hardware, software, data, and network communications (O'Brien & Marakas, 2008). According to Laudon & Laudon (2012), information system is a set or collection of several components that process, store, and distribute information to support decision making within an organization. Meanwhile, according to O'Brien & Marakas (2008) an information system depends on human resource/user, hardware, software, data, and network/communication media. Information system is a collection of sub-systems, both physical and non-physical, that are interconnected to each other and work together in harmony to achieve one goal that is to process data into useful information (Azhar Susanto, 2004).

Accounting information system is a set of components that collect accounting data and process the data for the benefit of users (Bagranoff, 2010). According to Gelinias (2005), accounting information system is a specialized subsystem of the information system in which the purpose of the accounting information system is to collect, process, and report information relating to the financial aspects of business activity.

## 4. Study Models and Hypothesis

Based on the prior literature discussion, the conceptual model is shown in figure below:



**Figure: Theoretical Framework Model**

To test this model, the following hypotheses were proposed as follows:

H.1: Information technology affects the quality of accounting information system



## H.2: The quality of accounting information system affects the quality of accounting information

### 5. Methodology

The research objects are the information technology, the quality of accounting information system, and the quality of accounting information. The population in this study consists of university, institute and polytechnic in Bandung. Observation unit is composed of personnel involved in the implementation of accounting, namely accounting staff and accounting manager. Samples were taken at random with a random sampling technique. This study uses primary data collected by distributing questionnaires to each respondent in University, Institute and Polytechnic. The data obtained were then tested for validity and reliability, so that the data is valid for processing. The data then were analyzed descriptively to describe the characteristics of each variable. Data will be analyzed by using path analysis with consideration of the pattern of correlative relationships between variables and recursive causality. T statistic is used to test the significance of the effect of each independent variable on the dependent variable. From the test results, then we compare the t value with the table value of t at 95% confidence level ( $\alpha = 0.05$ ) with the decision criteria: If  $t \leq t$  table:  $H_0$  is accepted and  $H_a$  is rejected, and If  $t$  count  $>$  t table:  $H_0$  is rejected and  $H_a$  is accepted. Each hypothesis will be tested through statistical t-test:  $H_0$  is rejected if  $t >$  t critical,  $\alpha = 0.05$  level.

### 6. Conclusions

The model developed in this study may explain the effect of information technology on the quality of accounting information system and the quality of accounting information. This model is able to predict whether the possible dimensions and indicators of adequate information technology have been applied in accounting information system. The results are then in particular will show the dimensions of any accounting information system which are major causes of weak information technology in higher education. Thus, based on these research findings, the author will propose some suggestions to improve the quality of information technology, so that the quality of accounting information system can be better. Thus, accounting information in University, Institute and Polytechnic can be used in the decision-making required by the internal and external parties of the University, Institute and Polytechnic.

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