THE IMPACT OF ACCOUNTING INFORMATION SYSTEMS ON EFFECTIVENESS OF INTERNAL CONTROL

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ABSTRACT

In the response of several financial scandals and corporation collapses, corporate governance, particularly internal control, comes to an attention of public. This research findings show that with effective internal control within the organizational boundary, management has reasonable assurance that it can enable businesses to achieve the objectives in accordance with compliance. It can be said that proper designed and functioning internal control mechanism can reduce the likelihood errors or fraud and hence organizations would perform as expected. To advance internal control, Accounting Information Systems (AIS) are growing continuously as an important factor to many corporations both in facilitating day-to-day business operations and in gaining competitive advantages. Moreover, AIS provide financial information that is essential to monitor and manage organizational resources together with conventional accounting controls. Furthermore AIS provide reasonable assurance regarding the reliability of financial reporting, and the preparation of financial statement in accordance with international financial reporting standards. This study has built the internal control framework as the organization boundary in order to facilitate organization to design effective internal control. Moreover, this study found association between the impacts of AIS on the effectiveness of internal control.

บทคัดย่อ

จากเหตุการณ์ของการล้มละลายของบริษัทขนาดใหญ่หลายแห่ง ทำให้การกำกับกิจการที่ดี (หรือ บรรษัทภิบาล) โดยเฉพาะเรื่องการควบคุมภายในเป็นที่สนใจของบริษัททั้งหลายทั่วโลก งานวิจัยนี้พบว่าประสิทธิภาพของการควบคุมภายในที่ดีสามารถเป็นเครื่องประกันอย่างหนึ่งได้ว่าผู้บริหารกิจการสามารถนำพากิจการไปสู่เป้าหมาย กล่าวคือการควบคุมภายในที่ถูกออกแบบไว้อย่างเหมาะสมจะมีประสิทธิภาพสามารถลดการเกิดทุจริตที่อาจจะเกิดขึ้นในองค์กรซึ่งช่วยให้องค์กรสามารถดำเนินการได้ตามเป้าหมาย

การเพิ่มประสิทธิภาพของการควบคุมภายในนั้น สารสนเทศทางการบัญชีได้เข้ามามีบทบาทอย่างมากทั้งทางด้านการดำเนินงานประจำวันและการดำเนินงานเพื่อความได้เปรียบคู่แข่งขัน รวมทั้งช่วยเพิ่มความถูกต้องและความน่าเชื่อถือของรายงานทางการเงินของกิจการ ซึ่งเป็นไปตามมาตรฐานการรายงานการเงินนานาชาติ งานวิจัยนี้ได้สร้างกรอบแนวคิดของการควบคุมภายในซึ่งใช้เป็นขอบเขตขององค์กรในการควบคุมภายใน

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Chapter1

Introduction

This chapter states an overview of this research which covers the areas of internal control and accounting information systems. This chapter also includes the following sections, research objectives, research questions, research scope, research methodology and research contribution.

1.1 Overview

Corporate governance has been discussed for many decades. Generally, corporate governance has succeeded in attracting a good deal of public interest due to its importance for economic development and society. Shleifer and Vishny (1997, p. 737) state that "corporate governance deals with the way in which suppliers of finance to corporations assure themselves of getting a return on their investment". Hence, the investors question that how they can monitor managers whether the managers would exercise their power and act for investors' interests. From a theoretical viewpoint, the firms will design the contract which will specify what the mangers must do with the funds, and how returns will be allocated (Shleifer and Vishny, 1997). However, it is very difficult to write such perfect contract which can specify all possible future decisions on how the firm's resources and assets will be allocated by managers effectively. Moreover, Prowse (1998) suggests that there is no guarantee that mangers will run the firms in the best interests of the shareholders. As such, managers will have more freedom to operate a firm's management in their interests, which may not correspond with those of shareholders. This condition makes it difficult for shareholders to ensure that their funds are appropriately managed in attractive or even profitable projects which will bring acceptable returns to them (Fama and Jensen, 1983, Shleifer and Vishny, 1997).

In the response of several collapse of entities such as Enron, WorldCom and Tyco, the US government issued the Sarbanes-Oxley Act (SOX) in 2002. In particular, section 404 of SOX requires that public company to report the effectiveness of their internal control systems and requires auditors to verify management's reports as well as to provide their own reports on the effectiveness of the internal control systems (COSO, 1992). This can remind managers of their responsibilities including the appropriate safeguard against the devolution of effective internal control. McKay (2006) suggests that manager is responsible for the design, implementation, and monitoring of internal controls. In fact, the internal control is an important factor that protect the entity from fraud, waste, abuse, and misstatements in the financial statements. Effective internal controls must be well designed, thoroughly documented, appropriately implemented, and regularly monitored (Ge and McVay, 2005; Hermanson 2005; Janvrin, 2008). Therefore, it can be seen that manger has influence on internal control that bring the entity to create wealth for stakeholders.

Internal control is enhanced by information systems that may utilize of the XBRL GL standard (XBRL International's Global Ledger Taxonomy Framework). Such systems can be integrated to safeguard assets by maintaining electronic approvals of transactions, which can be audited automatically. This can help users avoid fraud by allowing internal auditors to check standardized rules and operate audit test. In addition, XBRL GL can also be used to maintain accurate information and aid in manual audits by storing information regarding the location of source documents, whether in electronic form or paper form (Brizarro and Garcia, 2011). Jones and Rama (2005) suggest that Accounting Information Systems (AIS) provide controlling functions necessary to monitor and manage organizational resources together with conventional accounting controls: inputs, processes and outputs. AIS are still growing continuously and playing an important role in most corporations in facilitating day-to-day business operations as well as in gaining competitive advantages. Such systems use modern Information Technology (IT) to perform more business functions from the input devices to sophisticated financial management planning and processing systems (known as Enterprise Resource Planning: ERP systems) (Turban et al., 2011).

Sarbanes-Oxley Act mandates a statement of management's responsibility for establishing and maintaining adequate internal controls over financial reporting (COSO, 1992 and Gauthier, 2006). Management is expected to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statement in accordance with international financial reporting standards (Hermanson, 2005; Gauthier, 2006; McKay, 2006). Furthermore, managers need to understand how these technologies emerge to protect the integrity of enterprise systems and improve the achievement of corporate business objectives in the broadest sense. In present, it seems that there is no framework related to effectiveness of internal control and AIS. Thus the impact of AIS on the effectiveness of internal control has become a critical concern amongst academics, directors, accountants, auditors and related persons. Generally, internal control has five essential elements framework including control environment, process of risk assessment, control activities, information and communication, and monitoring (Gauthier, 2006). These will be explained in the following chapter.

1.2 Research Problem

Internal control is essential to the effective operation of corporations as it consists of activities and procedures designed to provide reasonable assurance that business operation will be operated according to the plan and for the wealth of shareholders as a whole (Gauthier, 2006). Without effective internal control, shareholders would hardly ensure that management can achieve business's objectives.

1.3Research Objectives

The objectives of this study are as follows:

1) Investigate issues associated with effectiveness of internal control and AIS.
2) Develop the framework of AIS and effectiveness of internal control.

1.4 Research Questions

1) What is the impact of AIS on the effectiveness of internal control?

1.5 Research Scope

This study focuses on the impact of AIS on effectiveness of internal control.

1.6 Research Method

This research reviews key debates in the field of study. The methods of analysis and synthesis are used in order to synthesize interconnections of the impact of the AIS on effectiveness of internal controls over financial reporting, and then formulated regularities for research findings.

1.7 Research Contribution

This research explores the linkage of effectiveness of internal control with the interdisciplinary relationship of AIS and how AIS support the effectives of internal control. This research embraces knowledge of the conceptual internal control framework to illustrate criteria that provide quality information for users in making economic decision making and for managers in managing corporations successfully.

Chapter 2

Theoretical Framework and Literature Review

This chapter reviews literature related to previous studies in the areas of internal control, accounting information systems and impact of accounting information systems on the internal control. The chapter consists of four sections. The first section presents preceding studies of internal control specified to the necessary of internal control for entities and responsibilities of internal control. The second section includes accounting information systems, accounting controls and XBRL. Third section presents risk management. Last section includes related works.

2.1 Understanding Internal Control

Internal control is essential to the effective operation of companies as it consists of procedures and activities designed to ensure that companies can provide reasonable assurance that the transactions are properly authorized, recorded, and reported according to generally accepted accounting principles (GAAP) and International Financial Reporting Standards (IFRS) (Bonsón et al., 2009). COSO (1992) suggests that internal control can provide reasonable assurance that management achieves effectiveness and efficiency of operation, produce reliability of financial reporting, and compliance with applicable laws and regulations. Effective internal control is considered as one of several factors that significantly importance to quality of financial reporting. Quality financial reporting is an essential factor to fulfill the firm obligation to its investors as the investors must be able to rely on the financial information reported by the firm to make economic decision (PCAOB, 2004). In addition internal control can be used as checks on various processes of the firm, including financial reporting, operating efficiency and effectiveness, and compliance with applicable laws and regulations. Auditing Standards No. 2 (PCAOB, 2004, para 7. AS no. 2) defines internal control over financial reporting that as "a process designed by…., the company's principal executive and principal financial officers, or persons performing similar functions, and effected by the company's board of directors, management, and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles and includes those policies and procedures…".

Without effective internal control, companies would be argued as having inadequate assurance to stakeholders. Moreover, investors will perceive that the companies will hardly achieve the objectives. It can be said that the suitable designed and functioning internal control reduces the likelihood of significant errors or fraud that will occur in business operation, and hence companies would perform as expected. In general internal control has five essential elements framework which are control environment, process of risk assessment, control activities, information and communication and monitoring (COSO, 1992; Doyle et al., 2007).

2.1.1) Control Environment

Morris (2011) states that control environment is an indicator showing that how well management is meeting their responsibility. Control environment has a pervasive influence business decisions and activities of the organization. COSO (1992) states that control environment is one of the essential components of entity's internal control. That is, control environment sets the condition of an entity as it influences the control of people' consciousness in the organization. Moreover, control environment is considered as the foundation for all other components of the internal control system. However, businesses should remind themselves that integrity and ethical values are essential factors of the control environment (COSO, 1992, Moorthy et al., 2011). Gauthier (2006) states that internal control does not in a vacuum but it is surrounded by the environment or even corporate culture. The sound control environment depends on management's informed and the support to internal control. It is essential that the management must understand the environment in order to design the effective internal control. High quality control environment enable firms to access causes of financial misstatements as to control activity will be designed appropriately and put in the place that can reduce the risk of the firm (Ashbaugh-Skaife et al., 2008; McNally, 2014).

2.1.2) Process of Risk Assessment

It is well known that every company has to face a variety of risks from both external and internal sources and the companies are required to do risk assessment. The purpose of risk assessment is to identify the events, conditions or risks that can significantly affect the achievement of the efficient operation of financial and other service. Business risk includes the ability to survive of business, financial situation, public image and overall quality of product and/or services (COSO, 1992). In addition, agency problem could be one of many factors that can obstruct business from achieve its objective, and internal control is one of several factors used to reduce the agency problem (Morris, 2011). Gauthier (2006) suggests that risk is a factor that always changes which is the risk of yesterday is not the same as the risk of today or tomorrow. The factors that cause the risk change from time to time can be the changes in operating environment, the changes of information systems and technology, for instance. It can be said that risk assessment is not one time effort in contrast, it is on-going processes.

2.1.3) Control Activities

Control activities are the procedures or policies designed by management to ensure that the organization's objectives are not affected by both internal and external risks (Mihaela and Iulian, 2012). For example, a document control activity ensures that important documentation is prepared, complied and disseminated in an orderly and timely manner. In this way, any contractual or legal issue is documented and distributed to tackle the status of the procedures or policies. A compliance control activity makes sure that all need to be implemented and applied in order to comply with relevant legal and regulatory requirements. Implementation of the necessary controls are prepared clearly so that all concerned stakeholders are well informed. If there is any change, it should be only made with proper authorization. Control activities can help stakeholders to ensure that necessary actions are taken to identify risks to achieve the entity's objectives. Control activities is identified as several activities, for example, approvals, authorizations, verifications, reconciliations and reviews of operating performance, security of assets and segregation of duties. Though most of organizations have other extra controls activities to increase the confidence of stakeholders (COSO, 1994; Schneider and Church, 2008).

2.1.4) Information and Communication

It is common that organizations must have a sound communication process that captures information and then provides it to those who need it. For this purpose, communication systems must allow information to flow around the organization. Generally, information should be carefully structured to avoid misunderstanding, and this is one of the reasons why unstructured information is meaningless to stakeholders (Morris, 2011).

In addition, the information needs to be allowed to flow back up to those who are responsible for making corrections in order to weaken the chance of misunderstanding (Gauthier, 2006). Particularly, information must be identified, captured and communicated in a form and timeframe that enables user to carry out their responsibilities. In practice, information systems produce reports containing operational, financial and compliance-related information that is essential for operating and controlling the business. (Bagranoff et al., 2005).

Overall, good communication is an essential part of good policy making and risk assessment. It can enable stakeholders to check the information they received and assessed. Further, engaging a wide range of efficiency communication can help stakeholders to improve the reliability of information about risk issues.

2.1.5) Monitoring

Monitoring determines whether or not policies and procedures designed and implemented by management are being conducted effectively by employees (COSO, 1992). The purpose of monitoring is to determine if proper policies and procedures are followed as planned. Monitoring consists of three elements. Firstly, a risk register which contains outputs of the other business processes such as identified internal and external risks, risk responses, triggers, and warning signs. Secondly, an approved change request includes changes to existing plan and method of work. The change request may require new risk analysis and new corresponding responses. Thirdly, a risk register update includes outcomes of risk reassessments, audits, corrective actions and recommended preventive actions (Glover et al., 1995).

Ashbaugh-Skaife et al. (2008) argue that misappropriation of company's assets caused by ineffective internal control. This ineffective internal control cannot be detected, unless the company has strong monitoring system. In addition, existing of monitoring can ensure that significant control deficiencies are identified timely. In operating business, new risks may arise or there is some changes of internal/external environments, monitoring can help to identify the new risks or any changes and the need for new control procedures (Lu et al., 2011).

After recognizing the internal control mechanism, this research carried out its impact to the way corporation prepares their financial statements. The first major way the Sarbanes-Oxley Act of 2002, also known as the SOX Act, impacted financial reporting to end self-regulation of public financial reports. The primary objective of the SOX Act is to improve the accuracy as well as reliability of corporate disclosures which can restore investor confidence. Specifically under SOX section 404, refers to the management assessment of internal controls that related to the preparation of financial statements for external purposes that must be fairly presented in conformity with GAAP and IFRS (Nickolett, 2008). Recent years most corporations embrace information technology (IT) to facilitate their business operations. IT has become increasingly important to most business's operation. As all businesses must involve with accounting and hence accounting information systems should be considered. Nickolett (2008) suggests that even the accounting systems are very importance as it has real consequences to financial reports however the adequate controlling system is required.

In addition, Statement on Auditing Standard (SAS), No. 94, addresses the nature and character of an entity's use of technology in its information system that affects overall internal control structure of the entity. Moreover the SOX section 404 (COSO, 1992) requires public companies to include a statement of management's responsibility in the financial report. This is to ensure that internal controls and procedures for financial reporting are effectively maintained along with an assessment of the effectiveness of the company's internal control structure (Hunton et al., 2006; Ashbaugh-Skaife et al., 2008). Furthermore it requires managers to identify any material weaknesses in internal control and to report causes of it as well as provide alternative solutions. Public Company Accounting Oversight Board's (2007) defines a significant deficiency as "a deficiency or a combination of deficiencies, in internal control over financial reporting that is less severe than a material weakness, yet important enough to merit the attention by those responsible for oversight of the company's financial reporting". The material weaknesses is an deficiency of internal control in financial reporting that leads to a material misstatement in the company's financial reporting. Ashbaugh-Skaife et al. (2007) find that firms reporting internal control deficiencies have lower quality information.

2.2 Understanding Accounting Information Systems

Accounting Information Systems (AIS) are computerized systems that transform financial and other related data into useful information (Bodnar and Hopwood, 2010; Bagranoff et al., 2007; Beard and Wen, 2007; Gelinas and Dull, 2008; Sajady, 2008). AIS exist at the intersection of two important disciplines which are accounting and information systems (See Figure 1).

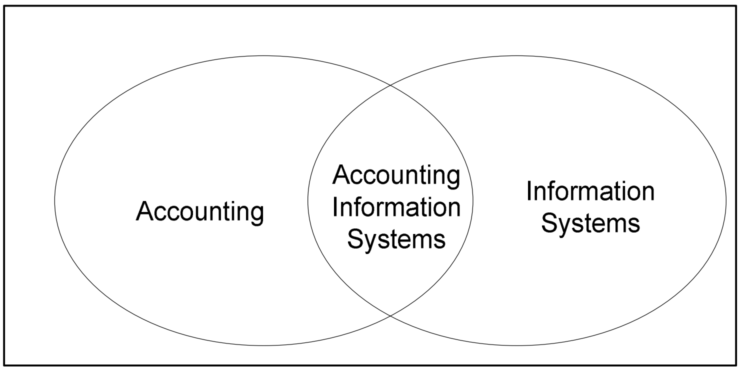

Figure 1: Accounting Information Systems (Source: Bagranoff et al., 2005, p.5)

The accounting field includes tasks performed by AIS to create information for accounts payroll, accounts receivable, accounts payable and others. In addition, AIS performs integrated tasks such as maintaining general ledger, financial planning, and distributing financial reports. Information Systems refer to computer systems that, for example of accounting in practice, collect accounting data, store it, and process it for end users (Hurt 2008). Data are referred to raw facts such as a set of raw numbers on a sales record. Once data are processed, information is further considered to be useful or meaningful. For example, sales record might be the daily sales reports (Kulruchakorn, 2007).

AIS analyze and record business transactions for the purpose of preparing business transactions, financial statements and providing the financial information necessary to manage their organizations. Thus AIS are also considered as a subsystem of Management Information Systems (MIS). It means that AIS operate functions of data gathering, processing, reporting financial events for effective decision making and control in organizations (Boockholdt 1999). Since IBM Company developed the first modern accounting unit that designed for banks in 1933, computing has been important part of business (Drucker, 2002).

2.2.1) Accounting Controls

In particular, AIS use modern Information Technology (IT) with traditional accounting controls: input, process, and output. (see Figure 2)

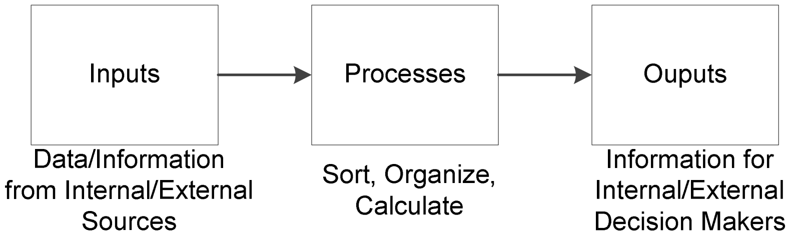

Figure 2: AIS Components (Source: Bagranoff et al. 2005, p.7)

From figure 2, the inputs include standardized data entry, Electronic Data Interchange (EDI), and electronic commerce (e-commerce) via the Web enabled technology. EDI is the direct computer-to-computer exchange of data via a communications network (Bierstaker et al, 2001; Bagranoff et al., 2005). For example, EDI is a set of interchanges between two parties: a buyer and a seller in general retail businesses. Messages from the buyer to the seller could include request for quotation (RFQ), purchase order, receiving and payment instructions. Messages from seller to buyer could include bid in response to RFQ, purchase order acknowledgment, shipping notice and invoice. These messages may simply provide data of receiving instruction or purchase order. By using EDI, the processing of messages is processed by computer. Thus, it eliminates costly and error-prone paper works because human intervention is typically intended only for error conditions.

The process of data entry involves the double-entry accounting system from individuals to large scale enterprise using personal computers and servers. With EDI has more impacts on the traditional model of performing transactions. For example, AIS facilitate the rapid sharing of information in an organization's information system from several information sources (Bonsón et al., 2009).

The outputs include any type of financial reports via computer display, or electronic communication devices for EDI and e-commerce. Moreover use of the Web technology, made it possible for the rapid dissemination of information to external users (stockholders and buyers) and internal users (managers and board members) via an e-commerce environment. However such provisions present few challenges of trust and security of the medium. For trust, eXtensible Business Reporting Language (XBRL) facilitates the exchange of financial statements over the Internet as a means of the SEC (Securities and Exchange Commission) financial reporting requirements in making outputs. Literature shows that XBRL is beneficial for decision making in several financial areas such as cost savings, greater efficiency, accuracy, reliability using financial data and disclosure (Bonsón et al. 2009; Reyes et al. 2007; Roohani et al. 2009).

AIS are growing continuously as an important factor for the businesses both in facilitates day-to-day business operations and in contributing to a competitive advantage (Huber, 1990; Simon, 1987). In the past decade, government and public have higher expectation for companies to provide faster data processing as well as more accurate, visible, and timely accounting information. With meeting these expectation, the companies still need to concern on maintaining privacy and security of their companies' information assets (Li et al., 2007). To provide such high quality accounting information, it can link to one of several factors which is the effectiveness of internal control. Moreover, the changing of business environment has signified companies the need of new ways to compete with rivals or to be successful (Spathis and Constantinides, 2004; Soudani, 2012). This points out that AIS are a vial factor to generate information needs for operation processes, managerial reports, budgeting and control within organization to gain competitive advantages and maintain sustainable development in growing hostile business environment.

Sonde (2008) suggests that several accounting and finance systems have not met expectations of many organizations because information is not easily accessible. Moreover, the changes effected by the Sarbanes-Oxley Act (SOX) of 2002, for instance, the board of directors, management and other personnel need to provide reasonable assurance in the efficient and effective operations, reliable reporting and compliance with applicable laws and regulations ever make it more challenging use of computerized systems in accounting. In producing such quality accounting information, managers need to pay attention to internal control.

2.2.2) XBRL and Changing of Process of Information

Bonsón et al. (2009) suggest that business needs to obtain detailed and specified data, and quickly to process it but still maintains its accuracy. In the past XML (eXtensible Markup Language) was widely used for financial reporting and exchanging financial information electronically. In addition, it is a standard for the electronic exchange of data between computerized systems. However, a major problem with XML is that it likely lacks of consistency amongst users. For instance, without standardized XML tags, users cannot exchange financial information or extract data from XML files directly for validating financial information (Bonsón et al. 2009).

XBRL (eXtensible Business Representation Language) is introduced as it can solve this consistency problem by describing financial information in the standardized format for public and private companies and other organizations. XBRL is a language for the electronic communication for business and financial data based on XBRL taxonomies (Bonsón et al. 2009). XBRL taxonomies define the tags that present accounting and financial terms used in XBRL documents and it is widely adapted for GAAP (Generally Accepted Accounting Principles) (Hurt 2008, p. 307).

2.3 Risk Management

Risk management is an important factor in reducing the probability that business objectives will be hazarded by unforeseen events (Chow, 2005). It also determines relevant risks and formulating proactive strategies for their mitigation (Gray, 2008; Moorthy et al., 2011; Pathak, 2005). Grand (2001) and Pathak (2005) suggest that information technology has impact on risk management functions within organizations in the sense that it brings capability of systematic, disciplined approach and improve effectiveness of organization’s risk management. Risk management consists of three distinct phases including risk identification, analysis of probability and consequences of risk events, and control and documentation (AMF, 2010).

2.3.1) Risk Identification

A risk identification phase develops a classification scheme for the likely risks that commonly falls into one or more of the following classification clusters including financial risk, technical risk, commercial risk, execution risk, and contractual or legal risk (Gray, 2008; Moorthy et al., 2011). Financial risk refers to the financial exposure a corporation opens itself to when operating a corporation with a large uncertain to capital investment. Technical risk may involve unique technical features or unproven technology when new systems is being under or over developed in meeting specification requirements (Chow, 2005; Gray, 2008). Commercial risk is an uncertainty associated with unknown customer acceptance of a new product or service in the marketplace. Execution risk is related to the specific unknowns or uncertainties that could have a negative impact on execution of the plan. Contractual or legal risk states terms and conditions to limit their legal exposure through legal protection (Gray, 2008).

2.3.2) Analysis of Probability and Consequences of Risk Events

An analysis and probability and consequences phase estimates the likelihood of each of these risk events occurring (Gray, 2008). Each risk prioritized according to the probability of its occurrence along with the potential consequences. This way, the organization focuses on more high likelihood of occurring and high potential for damaging the organization (GAO, 1993; Gray, 2008).

2.3.3) Control and Documentation

A control and documentation phase is a key final component in the overall risk management process to develop a reporting and documentation. This phase helps managers to classify and codify the various risks the organization encounter, its responses to these risks and the outcome of its response strategies. (Chow, 2005 and Gray, 2008)

2.4 Related Works

Several studies from The Stock Exchanges of Tokyo, Shanghai, Spain and New York show that the successful exploitation of XBRL depends on the available of local GAAP or use of the IFRS taxonomies (IASCF, 2008). There is little evidence of existing use of XBRL for reporting by listed companies even though XBRL had been promoted as a tool for financial reporting. The reasons for the lack of use of XBRL reports are incapable accounting software and information systems, and difficulties in exploiting XBRL outputs according to international and local GAAP. Some general principles are observed by researchers to overcome the obstacles. Church and Smith (2005) investigate an ontology-based dynamic enterprise model that applied for planning sustained compliance with the Sarbanes-Oxley Act. This model uses the resource-event-agent (well known as REA) framework that supports an integrated view of enterprise processes.

Cormier et al. (2009) present the use of Web sites as a disclosure platform for corporate performance that apparently takes into account for valuation of corporate earnings. Moreover, Chou et al. (2008) show that ontology of accounting makes it possible to share a common understanding of accounting theory in particular for the specific structure of the profit and loss statement. According to their studies ontology is limited to relatively small part of AIS. Furthermore, Adams et al. (2002) investigate ontology of public authorities for electronic transaction services based upon the Enterprise Ontology.

Their study still toward the defining, and characterizing terminology for the domain of transaction services.

In summary, this chapter introduced the concepts of internal control related to accounting information and the principle of AIS. The literature shows the state of recent issues associated with internal controls in accounting as well as its use of XBRL. Moreover, it includes the various scholarly approaches for an effective internal controls environment.

Chapter 3

Framework Development AIS and Internal Control

This study investigates the impact of AIS on the effectiveness of internal control and the conceptual framework of AIS will be developed. This chapter will firstly discuss on the impact of AIS on internal control in two areas. Secondly, it will discuss on the conceptual framework development which included adapted information from COSO, internal control-integrated framework, SOX and other related research findings.

3.1 Impact of AIS on Internal Control

Our research findings include two significant areas of AIS that influence on the effectiveness of the internal control and therefore, can increase risk of fraud and deteriorated the reliability of corporations. Firstly, a corporation does not adequately restrict access to accounting and financial data to only those computer support staff who needed it. When the corporation does not adequately monitor the activities of thousands of employees who are authorized to access accounting files, the organization does not have reasonable assurance in its outcomes. In this case, the data might be manipulated to generate unauthorized access or changes might be made to AIS. As a result, essential operations could not be continued due to above unexpected interruptions.

Secondly, as business's operation varies according to their owned operations, incorporated and non-incorporated parties are involved. Considering to internal control, it must be treated according to established rules that depend on the structure of the business operations which constitutes the business for the purpose of accounting and reporting. According to SOX, section 302, the Act requires that the chief executive and the chief financial officer in the periodic statutory financial reports evaluate the effectiveness of the internal controls and disclose any weakness in the internal controls (COSO, 1994). Imperfection of internal control is associated with the severity of the international control weaknesses and disclosures such as lower quality, financially weaker, rapidly growing of business but more complexity with less expertise on the audit committee (Kinney, 2000). Moreover, SOX, section 404, requires that the management's assessment must include the design and the effectiveness of the firm's internal controls in their management report. In general, weaknesses in the internal controls can affect the quality of financial reporting and statement by either allowing international or unintentional errors. This increases level of uncertainty to the risk of accuracy of financial reports due to unreasonable assurance regarding the transparency, timeliness and quality of financial reporting.

The SOX and its international equivalent have compelled corporations to institutionalize the risk management systems. These regulations have had huge impact on management practices as it increases interests in internal control systems, managing risks, and sustain compliance with the SOX (Nickolett, 2005). In additional, it may have implications on financial information quality, management reliability, and management competence. In summary, this study suggests that an unwell-organized internal control system contribute many ways in a corporation's effectiveness in overall performance.

3.2 Framework Development

This study has developed conceptual internal control framework which can be considered in three approaches. This section will discuss the conceptual internal control framework that can be considered in three approaches (see also Figure 3). Firstly, an upstream approach provides roles of management which is focused on role of governance influence on communication, risk assessment, and monitoring. Secondly, a downstream approach illustrates reasonable compliance in the effective operations that provides accurate, visible and timely accounting information. Finally, the organization boundary approach illustrates limits of the people and information involved in the internal control.

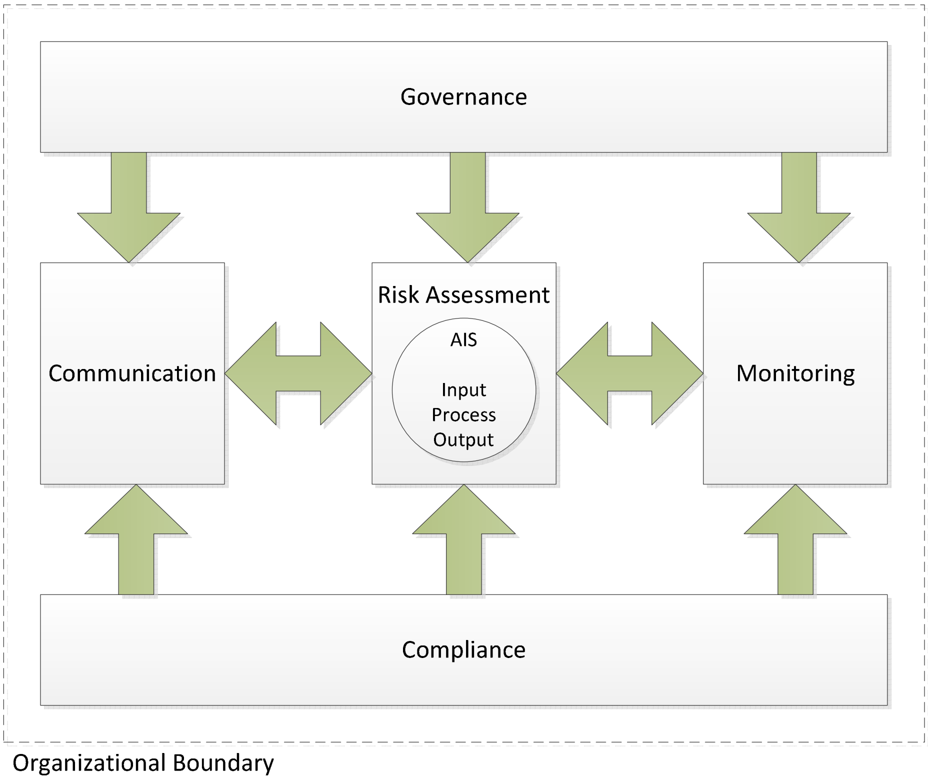

Figure 3 Internal Control Framework

This study will also discuss the internal control framework in six elements which are : governance, communication, risk assessment, monitoring, compliance and organizational boundary.

3.2.1) Governance

A role of governance is related to accountability that embraces the need to ensure the quality of the business's operations. It is naïve to assume that accountability in the process of disclosing relevant information (known as information disclosure) and intestinally proving the appropriate information (known as transparency) to the public (in particular shareholders). In our framework, information disclosure and transparency are understood as a mechanism of accountability. That is, information disclosure as a mechanism of visibility, and transparency as the degree of information accessibility to the public. In this regard, it has been suggested that good corporate governance and its mechanisms can ease accountability problems and also improve the efficiency of governance system.

3.2.2) Communication

A role of communication is to capture, process, and provide information to all stakeholders who have need of it. A communication system must allow information to flow in and out of all directions within the organization to weaken the chance of misunderstanding. In addition, quality information must be identified, captured and communicated in a form and timeframe that enables people to carry out their responsibilities.

3.2.3) Risk Assessment

A role of risk assessment is to identify the events, conditions or risks that could significantly affect the achievement of the efficient operation of AIS, and other activities of a business. Risk assessment should begin from the top of the organization and reach down to the department level. The events of authorization may involve limiting access authorizations for individual employees to only perform their duties and ensure their authorizations. It may include reviewing these authorizations periodically. Moreover, there should be established procedures for reviewing the access activity of employees. Any modification requests of AIS should only be considered via independent quality assurance review. To enhance system and data integrity, AIS must meet requirements with regards to the security, reliability, availability and relevance of accounting and financial information.

3.2.4) Monitoring

A role of monitoring is to determine whether or not policies and procedures designed and implemented by management are being conducted effectively in its organizational compliance. For this purpose, management ensures that significant control deficiencies are identified timely and help to identify the new risks or any changes and the need for new control procedures. It must ensure that an internal control system is designed to provide some quality assurance of the efficient use of organizational resources, and to ensure that accurate information is maintained. Moreover, an appropriate process is established to meet the reliability requirements for published accounting and financial information.

3.2.5) Compliance

A role of compliance is to comply with the policies and procedures which ensure that the organization's objectives and goals are not negatively affected by both internal and external risks. Regulatory agencies may interest in timely, accurate, and complete disclosure of information designed to maintain orderly and fair markets. In this way, monitoring ensures that significant control deficiencies are identified timely. In addition, it should help to identify the new risks or the need for new control procedures. Thus, internal control system provides some assurance of the efficient use of organizational resources, and to ensure that accurate information is maintained.

3.2.6) Organizational Boundaries

A role of organizational boundaries is to determine the legitimate or illegitimate, the acceptable or unacceptable, the in or out, the controllable or uncontrollable to address certain functional prerequisites within the internal environment, and to interact with their external environment. The organizational boundary approach is to provide limits of the people and information involved in the internal control.

In summary, the conceptual internal control framework illustrates a viewpoint on a role of governance that has procedures to ensure the effective operation of company activities. In addition, the framework formulates reasonable compliance in the effective operations that provides accurate, visible, and timely accounting information to limits of the people and information involved in the internal control.

Chapter 4 Validation for the Research Outcomes/Results

This research investigated issues of association between the impacts of AIS on the effectiveness of internal control. In this research, AIS as a risk assessment component, the related components of the traditional accounting control are working together for the purpose of governance, communication, monitoring, and compliance within organizational boundary. The effectiveness of internal control can provide quality information to decision makers to manage corporations successfully. The usefulness of AIS leverages business strategies in ways that increase the organizational performance, the achievement stronger and more flexible decision making processing. The main impact of AIS on the effective internal control concerns the usefulness of AIS with organizational requirements for collecting, entering, and processing data and storing, managing, controlling and reporting information so that the corporations can achieve its objectives. In addition, it refers to an optimal use of AIS in an organization, better adaptation to a changing business environment, more effective of decision making, a high degree of competitiveness, and improved external relationships for the corporation.

This research has found one limitation due to irony between the AIS and internal controls. AIS in the field of communication and information has negatively affect competence and efficiency of the AIS performance, and the internal control risks. For example, information may be compromised if faster financial reporting is demanded and pressure for timely audit.

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