

**Enhancing internal control and risk management in
the Accounting Information System-Thai SMEs**

by

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Declaration

This Thesis contains no material which has been accepted for the award of any other degree or diploma in any institute, college or university except by way of background information and duly acknowledged in the Thesis, and that, to the best of my knowledge and belief, it contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

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Abstract

This study examines the adoption of information technology within the accounting information system (AIS) of small and medium enterprises (SMEs) in Thailand focusing on the AIS, internal control and risk. A comparison made is between SMEs which have moved into the market for alternative investment (MAI) referred to as Initial Public Offerings (IPO) and those which have not. In a triangulated approach both mail survey and interview techniques were used to increase the richness of the data. Sampling was undertaken in the Bangkok region as IPO SMEs are located within this region. The results indicated that in non-IPO firms fifty-two percentage operate a computerized accounting information system as compared to seventy-seven percentage of IPO SMEs, forty-two percent of non-IPO operated a mixed system as compared to twenty-three percent of IPO firms. Interestingly only six percentage of non-IPO firms still operate manual systems. Both IPO and non-IPO SMEs indicated that they believed the use of information technology improved the firm's ability to capture and record business operations and business events, to assist in providing timely information, and to provide better information in terms of relevance and reliability to assist management in reducing costs and improving productivity as well as reducing risk. The functions associated with the AIS of collecting and storing transaction data, and processing data into information that is useful for decision making and providing adequate controls to safeguard the organisation's assets are identified to be important. There is recognition that the application of technology within the accounting information system is able to increase the efficiency of internal business operation as well as ensuring the adequacy of financial reporting.

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Chapter 1

Introduction

1.1 Introduction

This study investigates the use of the accounting information system (AIS) by Thai SMEs with a particular focus on the internal control system, application of technology, and risk management practices. Strengths and weaknesses of the internal control system in the management of risk in Thai SMEs are addressed. The use of technology within the AIS as an approach to improving the internal control system and in the management of risk in Thai SMEs is explored.

At present, there is no generally agreed definition of SMEs. The various administrative organizations which deal with the SMEs classify SMEs based on measures of fixed assets, registered capital, sales or number of employees. In Thailand, an official definition of SMEs, proposed by the Ministry of Industry issued in 2002, covers the number of employees and the value of total fixed assets (excluding land).

A number of terms that will be used extensively throughout this study are now discussed. The accounting information system (AIS) is the framework established that allows the accumulation, classification, processing, analysing, and communication of financially orientated information to stakeholders. It is composed of people, equipment and other resources to provide the framework for the transformation of data into information for decision making. A part of any accounting information system should be the internal control system. This system identifies the security in place to provide reasonable assurance to stakeholders that the organization has checks and balances in place to ensure that the accounting information system is working as intended, will allow the organisation to assess the achievement of its objectives and mission and offer protection against errors and fraud. Risk management has become a concern to business. This involves the steps taken to identify, understand and control for anything that may impede an organization from achieving its objectives. Technology has come to play an important role in the recording of and management of business information. Information Technology (IT) refers to the infrastructure established to record, analyse and communicate information. This embraces hardware, software, the operating

system, database management system, networking, and multimedia used to operate and develop an organization's information system.

1.2 Background of this study

In Thailand, as in other parts of the world, the success of an economy relies heavily on the performance of small and medium enterprises (SMEs). In 2005 there were more than 2.2m SMEs in Thailand comprising 99.5% of all enterprises, the number had increased by almost 40,000 from 2004. They are the country's largest employer group. SMEs account for some 90% of the country's manufacturers. While the share of SMEs in Thailand's Gross Domestic Product (GDP) totaled 1.9 trillion Baht (\$A 57 trillion) or about 38.3% of the total of value of GDP in 2005. (Office of Small and Medium Enterprises Promotion (OSMEP of Thailand 2005).

The government of Thailand has come to recognise the importance of the SME within the economy as a result of the 1997-98 economic crisis. This sector grew as the economic crisis had forced many Thais to become self-employed and/or create their own businesses after losing their jobs at large companies and government attention grew. The economic crisis had forced many Thai people into unemployment as large companies were forced to scale back activities and in many case file for bankruptcy and cease to operate. The Thaksin Shinawatra government believed that SMEs were the key driver of economic recovery as the larger companies were struggling to reorganise their debts (Siripunyawit, 2004).

Subsequent to the economic crisis in 1997-98 the Thai government has acted to promote and encourage the growth and development of the SME as a foundation for stability and to provide a basis for the on-going economic development of the country. In an effort to achieve this objective the Thai government created the Office of Small and Medium Enterprise Promotion (OSMEP). This office was charged with the responsibility to promote the SME. One way in which the OSMEP acted to achieve this was to create a fund for SME promotion to help them to list on the Market for Alternative Investment (MAI) established by the Stock Exchange of Thailand (SET). Once listed access to the MAI was expected to assist the SME in seeking additional capital. The MAI officially commenced operations on June 21, 1999. It is a dynamic stock exchange, featuring the high-growth potential of new age businesses, where

entrepreneurs and investors can come together for mutual gain (http://www.mai.or.th/en/about/vision_mission.html). SMEs which are doing well and meet the listing qualifications are able to raise funds or go public. In other words, the MAI was intended to act as a nursery for SMEs before registering on the Stock Exchange of Thailand (SET). As of July 2007, the number of IPOs had grown from 36 companies at June 2006 to 44. Furthermore, the department of Export Promotion (DEP) and SME Bank have collaborated to organise business matchmaking events to expand marketing channels for SMEs operators, in particular for exports (Jaiimsin 2005).

To assist in meeting the technology requirements of the SME, the National Science and Technology Development Agency (NSTDA) and the Office of the Higher Education Commission forged a partnership to found the Thai Business Incubator and Science and Technology Park Association (known as Thai-Bispa). This association was mandated to facilitate the sharing and exchange of technology, industrial innovations, other business benefits identified, and with other countries where SMEs have achieved success such as in Japan and South Korea (Jaiimsin 2005).

Information technology plays an increasing role in business today. Technology has played a role in enhancing revenue streams, in reducing production costs, and in providing relevant, reliable and timely information for the efficient management of a business enterprise. Information available can be used by the firm to assess its risk profile in the identification of potentially disruptive events, distinguishing between business segments, locations, policies and contracts. This information can assist in reducing the level of uncertainty and afford support to strategic decision-making (Smith 1999). Smith (1999) considering the role of information technology and the management information system in small business found that information technology improved the speed and reliability of information available within the organization.

While information technology within the accounting information system is able to support business operations both in day to day and in longer term planning the focus of SMEs has tended to be on shorter term day to day management. Welsh and White (1981) found that most SMEs adopted a short-term management perspective relying on the accounting information system for day to day management decisions rather than longer term/strategic planning. Seventeen years later Kuncoro (1998) similarly argued that finance departments needed to spend less time tweaking transaction processing

systems, and work harder to produce analyses that assists line managers make sound competitive decisions quickly and effectively. More recently Schubert (2006) found in a study of Swiss SMEs that 87.1% of respondents believed that technology could and should be used to achieve the objective of smoothly operating the business, with 80.1% believing technology could assist in achieving low cost operations and 79% believed that the adoption of information technology assisted in reducing processing time. The majority of the SMEs state that employees have access to required information at any time (79.4%). Eighty five percent of SMEs agree that they have access at anytime to decision relevant information. Schubert and Leimstoll (2007) results confirmed earlier findings in other studies that SMEs tend to use computers mainly to support operational or administrative tasks, rather than for strategic decision making purposes (Raymond & Thalman-Management 1982, Duschinsky & Dunn 1988, Yap *et al* 1992, Wilson & Sangster 1992, Chen & Williams 1993, Foong 1999). Mohamed (2006) found that 80 per cent of business owners of SMEs in the UK believe that IT innovations are a key to growth. The SME does need quality information to enable accurate planning and decision making for the future in order to compete in local market and global markets. Information needs to be update, accurate, and timely (Bressler & Bressler 2006). Appropriate information technology within the accounting information system can help SMEs adjust their internal processes to improve core business processes and reduce costs.

1.3 Justification and contribution for this study

The SME is important to Thailand's economic growth providing employment, products and service opportunities. In exploring the performance of these firms an adequate accounting information system linked to internal control systems, technology and risk management would seem to be essential yet there has been little research undertaken to assess the quality of the accounting information system in these Thai firms.

The NITC (2003) reported that many non IPO SMEs in Thailand were using a manual accounting system, and others had adopted an approach combining manual and computerized accounting systems. The Thai government has promoted, and is promoting the utilization of information technology among SMEs. The encouragement has sought to have SMEs adopt basic software programs to perform functions of accounting, finance, administration, and production management (NITC 2003). It is

argued that information technology allows systems to function at faster speeds, operate more efficiently and reduce space problems. One of the objectives of this study is to explore the degree to which SMEs in Thailand adopt information technology within their accounting system.

There are few SME studies in Thailand that have emphasized the accounting information system or the application of technology specifically. Prior work has emphasized information systems and e-commerce rather than the accounting function, the focus has been on the listed company considering impacts of ownership structure on corporate performance (Yammeesri 2003), the relationship between Thai accounting information and Thai security prices (Graham *et al* 2000), financial distress in listed companies using macro and micro variables (Tirapat and Nittayagasetwat 1999) and variables involved in predicting bankruptcy for finance companies (Person 1999). Art-Erm and Chiamsiri (2002) examined a case study of a “Stand Alone” Small and Medium-sized Enterprise adopting E-Commerce. Panyasorn *et al* (2004) explored the use of Lotus Notes in SMEs. Art-Erm (2002) and Intrapairot and Srivihok (2003) investigated E-Commerce opportunities for small and medium-sized enterprises This study will assist in filling this gap in knowledge by investigating the adoption of information technology within the Accounting Information System in Thai SMEs. A comparison between the Initial Public Offerings (IPOs) and non-IPO SMEs in Thailand is made.

According to The Accounting Information System, composed of people, equipment and other resources, provides the framework that allows the accumulation, classification, and processing of transaction data in a form that can then be presented as information for analysis, and communication, primarily of a financial nature, to meet the decision making needs of internal and external stakeholders. Implicit in this system are the provision of adequate controls to safeguard the organization’s assets, including it’s data (Romney and Steinbart 2000). Technology generally plays a significant role in the AIS today as computerisation of this activity is common (see Breen *et al* 2003). Computerised applications are characterized by the presence of a high volume transaction of transactions that require processing. In this the technology plays four main roles - data gathering, data manipulation, data storage, and document preparation. This activity results in the transformation of the data into information, and prepares the information for users both inside and outside the firm (Report of the study group on the

objectives of financial statements, American Institute of Certified Public Accountants, 1972 quoted in Lothian 1976, Gibson 1963 quoted in Thomas & Evanson 1987, and Mcleod 1995.). The importance of quality financial information became clear during the economic recovery in the late 1990s with companies seeking to identify ways to increase shareholder value through growth (Nogiec 1998). Equally the role that technology could play in this process also became clear. Nogiec (1998) stated that there were four imperatives in the development of a strategic framework for the financial function:

1. Improving fundamental financial processes.
2. Conducting value-added business analysis.
3. Managing business risks and opportunities.
4. Developing company-wide performance measurement systems.

Each of these can be made more effective adopting information technology within the accounting information system. In order to control day-to-day business in small business, management may need more accurate and timely information (Newpeck 1977). Information needs to be update, accurate, and timely (Bressler and Bressler 2006). Kuncoro (1998) argued that finance departments need to spend less time tweaking transaction processing systems, and work harder to produce analyses that assists line managers make sound competitive decisions quickly and effectively. This study will explore these issues as well.

In summary, this study will contribute by exploring within Thailand the utilisation of the accounting information system by SMEs and the roles play by technology, internal control and risk management. The results of this study should assist in identifying how Thai SMEs might operate more efficiently and effectively to support financial decision; raising external funds and making long-term investments. The study will also offer insights into approaches that Thai SMEs could use to limit fraud and financial mismanagement and ensure compliance with laws, regulations, and the firm's own policies. Further the study will reinforce to Thai SMEs the importance of having good accounting systems in place with effective internal control and risk management systems.

1.4 Research questions

The research questions to be developed to investigate the accounting information systems adopted by both the IPO and non-IPO SME in Thailand explore the application of technology, the role of internal control and risk management within the accounting information system in Thai SMEs. A comparison between the Initial Public Offerings (IPOs) and non-IPO SMEs in Thailand is to be made. The major research question posed in this study is:

What is the role of technology, internal control and risk management within the accounting information systems of IPO and non-IPO SMEs in Thailand, and how do they differ in their approach?

The major research question is explored by identifying the main characteristics identified and stated as four separate research questions. These questions are:

- 1. Do SMEs utilize technology within their accounting information systems in Thailand?
- 2. What internal control procedures are adopted within the accounting information system by Thai SMEs?
- 3. What risk management practices are adopted by Thai SMEs to safeguard the accounting information system?
- 4. Is the information generated within the accounting information system able to meet the decision making requirements of the SME?

1.5 Methodology

The sample selected for this study is drawn from SMEs involved in the Initial Public Offering (IPO) and non IPO groups. In this study, IPO SMEs are those firms which have entered into the market for alternative investment (MAI) and those which have not are termed non-IPO SMEs. The sample of SMEs selected for this study are located in Bangkok and the metropolitan area. They are selected for two reasons. The first being that most of the IPOs are located in the Bangkok area, and second by focusing on the Bangkok area this helped to ensure that the target respondents, IPO and non-IPO SMEs, faced similar regulations, policies, infrastructural support and environmental

conditions (Kotey 1999). The adoption of area sampling also assisted in overcoming time and resource constraints in administering questionnaires (Cooper and Schindler 2006).

A triangulated approach is adopted in this study to enrich the data collected. A quantitative mail survey is undertaken to be supported by a small number of qualitative interviews. In selecting the sample for this study the total population of IPO SMEs, listed by the MAI (June 2006), is selected. This gave a sample of 36 IPO SMEs. Due to the large number of non-IPOs a stratified random sample from the directory of the Institute for Small and Medium Enterprises (ISMED) website (<http://sme2.ismed.or.th/alliances/index.php> retrieved 14 June 2006) is used to select 200 non-IPO SMEs for inclusion in the mail survey. The mail survey is followed by a number of semi structured interviews to assist in enriching the data collected. There are two non-IPO SMEs and two of IPO SMEs respondents who were willing to attend the interview.

Ethical approval has been gained for this study from the Northern Tasmania Social Sciences Human Research Ethics Committee. Approval required a review of the nature of the research, the instruments and documentation to be used in the study, and issues of confidentiality, sample selection, participant agreement and data storage.

Two research instruments are to be developed for the purpose of data gathering, one for the mail survey, the second, for the interviews. They will be developed in English and then translated to Thai as this research was undertaken in Thailand. It is considered important to ensure that respondents will be able to understand the questions asked and to feel comfortable in responding. The 'back translation' technique, described by Brislin *et al* (1973) is to be adopted. Both the English and Thai versions will be reviewed by academics with skills in both languages to ensure the meaning are clear and reflect the same meaning in both languages. Following the back translation process, a pre-test of the Thai version of both the questionnaire and semi-structure interview is to be conducted in order to examine whether the question items proposed in the questionnaire and interview guide are clear and understandable, whether the instructions for completing the survey and providing data is free of ambiguities, and whether the time allow to complete the survey is adequate (Burns 2000, Cohen *et al* 2002).

The mail survey adopting a questionnaire is to be used to collect demographic information about respondents, to identify how accounting information was processed within the SME, how information technology was being utilised by the SMEs, in particular with regard to the collection and preparation of financial information and, the background to the decision whether to adopt information technology within the SMEs Accounting Information System, and the benefits that might be obtained from the use of information technology in processing accounting information. Other than for demographic details a Likert scale, rating from 1 to 5, for questions in the mail survey will be adopted to assess agreement with, or the importance attributed to issues by respondents. Once questionnaires are returned, the raw data will be coded and entered into the computer and then analysed using SPSS (V.14).

A range of statistics is to be used, from simple frequency distributions to t-tests. Descriptive statistics such as frequencies will be adopted to analyse demographic information. T-tests will be used to identify whether there are significance differences between IPO and non-IPO SME's in relation, for example, to the importance of various characteristics relating to the adoption of information technology by respondents, the importance of the role of technology play in the accounting information system, and the importance of factors seeking to minimize risk arising from accounting information system.

1.6 Outline of the thesis

There are six chapters in the thesis. Chapter 1 provides the background to the research and introduces the main research question this question is subdivided into four questions for investigation. Justification of the research and a brief overview of the research approach and research methodology are discussed. Lastly, the layout and content of the thesis is presented.

Chapter 2 provides a brief of history of the Thai economy, growing concerns and input from the government sector toward the SME, an overview of the SME in Thailand, a review of the establishment of the Market for Alternative Investment (MAI), and the importance of risk management, internal control, and accounting information systems to the SME in Thailand.

Chapter 3 describes the research methodology adopted for this research. The development of the research framework, research questions and hypotheses development are discussed. Also, the pilot studies is described. The survey methodology, sample selection, data collection methods, research instruments adopted and analytical techniques are discussed.

In chapter 4 data collected, both mail survey and semi-structured interviews, are analysed.

Chapter 5 addresses the research questions posed, hypotheses that were posed are tested, and enriched with the qualitative data collected.

Chapter 6 presents the major conclusions of this research, limitations of the study and makes recommendations for future research.

1.7 Summary

The purpose of this chapter was to lay the foundation for the research by providing background information and introducing the main research question and sub research questions. Justifications for this study are provided together with the contributions of the research. Next, the research approach and methodology are demonstrated. Finally, an outline of the thesis is given in the last section of the chapter.

Chapter 2

Literature review

2.1 Introduction

In this chapter the Thai context of the study is discussed looking at a brief of history of the Thai economy, growing concerns and input from the government sector toward the SME, an overview of the SME in Thailand, a review of the establishment of the Market for Alternative Investment (MAI), and the importance of risk management, internal control, and accounting information systems to the SME in Thailand.

This study investigates the present position and the importance attached to information technology and the potential roles that information technology should play within the Accounting Information System (AIS) in the Thai SME. A comparison is made between the Initial Public Offerings (IPOs) and non- IPOs SMEs, that is between those SMEs that list on the Market for Alternative Investment (MAI), and those that do not.

2.2 Importance of the SME in the Thai economy

At present, there is no generally agreed definition of SMEs. The various administrative organizations which deal with the SMEs classify SMEs based on measures of fixed assets, registered capital, sales or number of employees. In Thailand, an official definition of SMEs, adopted by the Ministry of Industry (2002), covers the number of employees and the value of total fixed assets (excluding land). This definition will be adopted in this study. Adopting this definition SMEs can be classified into the four categories shown in Table 2.1.

Table 2.1 Definition of Thai SMEs.

Industrial Sector	Number of Employees	Value of Fixed Asset	
		THB m	\$US m
1. Manufacturing			
- Small Enterprises	< 50	< 50	< 1.74
- Medium Enterprises	51-200	50-200	1.74-6.96
2. Wholesale			
- Small Enterprises	< 25	< 50	<1.74
- Medium Enterprises	26-50	50-100	1.74-3.48
3. Service			
- Small Enterprises	< 50	< 50	< 1.74
- Medium Enterprises	51-200	50-200	1.74-6.96
4. Retail			
- Small Enterprises	< 15	< 30	< 1.04
- Medium Enterprises	16-30	30-60	1.04-2.08

Source: Adapted from Ministry of Industry (2002)

Currency exchange rate based on June 29th 2007; \$US 1 = THB 34.82

As SMEs in Thailand are the largest business cluster, classifying enterprises by size in 2006 there were 2,287,057 enterprises ninety nine percent of this number were small enterprises (OSMEP, 2007). In the year 2006, SMEs of all sectors has generated products worth THB 3,041,895.9 million (USD 87,360 million) out of the total of value of Gross Domestic products with THB 7,816,474 million (USD 224,482 million) or 38.9 percent. Considering GDP of SMEs in each the enterprise size, Small Enterprise (SE) had the highest number of GDP which was THB 2,043,460.3 million (USD 58,686 million) or 26.2 percent out of value of GDP. Medium Enterprise generated products worth THB 998,435.6 million (USD 28,674 million) or 12.8 out of value of GDP.

The SME has taken on an important role in driving the recovery of the Thailand economy subsequent to the financial crisis of 1997. They have been supported by governance agencies recognising their roles by releasing policies to support and promote SME growth and operation. In addition, it is recognised that there are differences between the larger and smaller firms especially in terms of financial prowess and transparency. Questions are often raised regarding the accounting information system and financial reports. Concerns are raised about whether good

governance is practiced including issues of accountability, transparency and equity. It is important for SMEs to adapt to new technology in order to compete and survive in a competitive globalised world. This study attempts to determine how Thai SMEs both IPOs and non IPOs utilize technology within their accounting information system, how they deal with the issue of risk management and internal control within their AISs.

In the next section, background to concerns for the SME and increasing government support for the SME in Thailand, and establishment of the Market for Alternative Investment (MAI) to assist the SME in seeking additional capital are discussed.

2.3 Increased attention to the well being of the SME

2.3.1. Background to concerns for the SME

Thailand was one of the world's faster growing economies between 1986 and 1991. The economic performance during these years was virtually unparalleled with the value of manufactured exports growing at over 26 percent a year; total exports over 18 percent and GDP at 9.6 percent. This growth was accompanied by a surge in foreign direct investment, particularly from Japan and the Asian Newly Industrialising Countries (NICs). After 1991 growth slowed, but GDP still grew at an average of 6.8 percent per annum. Since 1993 foreign investment has declined and overseas debt increased, and during 1996 the rate of growth of export earnings contracted sharply. These issues came to the fore with the 1997 financial crisis and a dramatic slowing of growth (Dixon, 1999).

Prior to mid 1997 the Bank of Thailand pegged the value of the baht to a basket of currencies of which 80% was weighted to the US dollar. In response to pressure by currency speculators the bank abandoned its peg on July 2 1997 in favour of a managed float. The devaluation was followed by volatile exchange rates (Graham *et al* 2000).

Increasing domestic interest rates were worsened by this defence of the currency. The result was a liquidity crisis in Thailand largely caused by Thai firms turning to offshore financing in the mistaken belief that the value of the baht would remain tied to the US dollar. On July 2, 1997 the Bank of Thailand abandoned pegging of the baht in favour of a managed float. The bank's official announcement was followed by a 20 percent

drop in the value of the baht relative to the US dollar (Graham *et al* 2000). The crisis brought other dramatic changes. Manufacturing output and national investment shrank, poverty increased and the exchange rate collapsed. Many banking and financial institutions closed for reasons related to the financial crisis. The Stock Exchange of Thailand (SET) reported that 255 companies had net losses from their operations for the third quarter of 1997 amounting to 125 billion baht (The Bangkok Business, 1998).

2.3.2 Increasing government support

After the financial crisis of 1997 the Thai government became concerned about the key success factors needed to build a successful and sustainable economy (Jongwattana, 1999). These factors included the development of human resources, infrastructure, and supportable development of SMEs. The Thai government's efforts to improve competitiveness through its efforts to rationalise tariffs, promote the development of business clusters, long-term savings and investments, emphasised SMEs, and to improve logistics systems and skills.

The strategy used to increase the quality and productivity of products included the utilisation of technological and managerial innovation, especially human resource development. This strategy aimed to encourage entrepreneurs, both existing and new, to develop their skills and the capabilities of their employees (ISMED, 1999). The government provided two master plans for helping SMEs, one short, the other long term. The short-term plan focused on identifying ways to resolve the financial problems faced by SMEs such as poor liquidity which had become obvious after the 1997 crisis by providing investment capital to increase the competitiveness of SME's. The long-term plan was to improve SME performance in order to obtain sustainable growth in the global market. This included legislation to assist SMEs, the establishment of an Institute for SME Development and government support for SME development programs generally (ISMED, 1999).

The Ministry of Industry (MOI) has provided managerial and technical assistance to SMEs through the Department of Industrial Promotion (DIP). The main activity of DIP is to promote the policies established by the Office of Industrial to SMEs. The National Plan of the Ministry of Industry had identified five main policies intended to support the development of urban industries and manufacturing SMEs (Leopairote, 1997).

These policies focused on the encouragement of investment in SMEs, establishment of industrial networks, promotion of investment in industrial sectors with high potential, seek to enhance the competitiveness of Thai industries, especially export-oriented industry and encourage the dispersal of urban industries to rural areas. By 2004, there were eleven centres of the Department of Industrial Promotion (DIP) throughout Thailand to assist the SME. These departments were linked to other government and private services such as financial and academic institutions.

While the government has provided many assistance programs for the development of Thai SMEs it would appear that these have been relatively unproductive. Simachokdee (2000) identified two issues that had confronted the Thai manufacturing SME - internal problems, such as marketing problems, technological problems and manpower shortage, and financial problems and the difficulty of access to government support for example, most governmental programs are focussed in the Bangkok area. Skill development and vocational training programs are generally too academic and unable to provide useful, up-to-date practical training to meet the needs of SMEs, SMEs financial assistance programs, when they are used, generally miss their intended targets and end up financing larger producers or financial intermediaries.

2.3.3 Establishment of the Market for Alternative Investment (MAI)

Subsequent to the economic crisis in 1997 the Thai government acted to promote and encourage the growth and development of the SME as a foundation for stability and to provide a basis for the on-going economic development of the country. In an effort to achieve this objective the Thai government created the Office of Small and Medium Enterprise Promotion (OSMEP). This office was charged with the responsibility to promote the SME. One way in which the OSMEP acted to achieve this was to create a fund for SME promotion to help them to list on the Market for Alternative Investment (MAI) established by the Stock Exchange of Thailand (SET). Once SMEs were listed it was anticipated that access to the MAI would assist these firms in seeking additional capital. The MAI officially commenced operations on June 21, 1999 (http://www.mai.or.th/en/about/vision_mission.html). The MAI was intended to act as a nursery for SMEs before registering on the Stock Exchange of Thailand (SET) (Patrawimolpon & Pongsaparn 2006). As of July 2007, the number of IPOs had grown from 36 companies at June 2006 to 44. Furthermore, the department of Export

Promotion (DEP) and SME Bank have collaborated to organise business matchmaking events to expand marketing channels for SMEs operators, in particular for exports (Jaiimsin 2005). The MAI provided a new fund-raising alternative to smaller firms with potential for growth. It was also to provide opportunities to assist debt restructuring, avenues to promote venture capitalist investment and to provide more investment choice to public investors (http://www.mai.or.th/en/publication/brochure_p4.html).

2.4 Concerns the SME must address

This section considers the issues of risk management and internal control. While the SME is recognised as one of the major engines able to sustain the economy of a country a number of concerns have been raised relating to financial information and transparency. Many of these concerns could be alleviated if appropriate risk management, accounting information systems and internal control systems were in place. This study investigates whether IPO and non-IPO SMEs in Thailand have risk management, internal control system in place, also how do they operate the accounting information system in their firm.

2.4.1 The importance of risk management and risk management studies in SMEs

Business must address risk on a daily basis—risk fundamentally refers to the uncertainties that are faced by business, and will, if not addressed often lead to losses confronted by the firm. Managers must manage risk. Stewart (2002)¹ defines risk management as:

Risk- let's get this straight up front-is good. The point of risk management isn't to eliminate it; that would eliminate reward. The point is to manage it-that is, to choose where to place bets, and where to avoid betting altogether (p. 202).

In a business sense risk management is about reducing the cost of risk. Successful businesses survive and grow by taking risks and continually adapting and responding to the changing environment in which they operate. The mismanagement of risk can result in a significant cost to the firm. Managing risk is one of the primary objectives of firms operating internationally (Ghoshal 1987). It is necessary for businesses to identify the different risks that confront them. In this study the risk of interest relates to the use of

¹ 'Managing risk in the 21st century' Fortune (February 7, 2000): 202

technology, the accounting information system and the link between the two. Conyers (2007) has argued that risk management and the role of accounting, accounting information and decision making are highly integrated. He noted that risk assessment teams include those with skills in accounting and information technology. Barton *et al* (2002) argued that the internet and information technology are forces that create increased uncertainty and add to an increasingly risky and turbulent business environment. Kapuria (2008) identified four main types of information technology risk and argued that businesses of all sizes must address these four concerns:

- Security – the risk that information can be accessed by unauthorised people caused of data leakage, data privacy, fraud, and endpoint security.
- Availability – the risk that the system will not be accessible due to unplanned system outages such as data loss and data corruption.
- Performance – the risk associated with the bandwidth resulting in bottlenecks and the limits to the information that can be accessed or transferred.
- Compliance – the risk associated when the system is not able to meet regulatory mandates or fails to meet internal policy requirements.

While the majority of studies have focused on the larger firm attention to risk management is equally important to the smaller firm. Gilmore *et al* (2004) looked at how small firm owners' or manager's perceived risk and how they managed risk situations. Dominant areas in which risk was identified as a potential issue related to cash flow, business size, entry to a new market or a new area of business activity and entrusting staff with responsibilities. Owner/managers employed various strategies to manage and minimize risk adopting two key risk management strategies - networking with other business people/professionals and drawing upon their own managerial competencies. The Institute of Risk Management SA (2006) found a correlation between small, medium and micro-sized firm failure and a lack of risk management. The major cause of firm failure was found to be a lack of financial know-how and the oppressive weight of regulation. The study also found that many SMEs perceived risk management as a larger business issue and suggest that there is a need to design methodologies suited to the SME. The Department of State and regional development in Australia (2005) identified categories of risk faced by the SME. The department indicated that the categories of risk faced by the SMEs were the same as for larger

businesses but degree of vulnerability was higher for the SME. These categories of risk are identified in Table 2.2.

Table 2.2 Categories of risk in small business in Australia

Risk Category			
Financial	Legal & regulatory compliance	Service delivery	Stakeholder management
Equipment	Reputation	Commercial	Strategic
Organizational	Operational	Project	Technology
Security	Safety		

Source: Minister for small business in Australia, Department of State and Regional Development issued on 2005

Research conducted by the Institute of Chartered Accountants in England and Wales (ICAEW 2002) found that many SMEs discussed how to handle general business risk no more frequently than once per year. In looking at risk firms commonly were found to consider risk at three levels:

- Level one - risks of managing employees, technologies, sales and brand reputation, risk of staff leaving and computer failure.
- Level two - risks related to business security, safety and financial and quality control.
- Level three - risks with both a lowest likelihood of occurrence but would have a high impact on the business, such as pensions and interest rate.

In order to deal with highly vulnerable areas, many businesses around the world not only implement several kinds of risk management tools but create guidance of risk management for SMEs. For instance, a research and development work carried out during the years 1996-2000 to develop risk management tools for SMEs in Finland. The results of this project were first compiled into a printed risk management toolkit which covers the risks found to be most critical for SMEs. Also, it provides the basic elements of risk management (Lappalainen & Piispanen 2001, Mikkonen 2003).

A guide for risk management in SMEs in countries in transition (CITs)² was created by the United Nations Economic Commission for Europe (UNECE). This guide covers the definition of risk, importance of risk, kinds of risks, and how to deal with risk.

In the Guide it is stated that in the past years of isolation from international business SMEs in CITs encountered many different difficulties and risky to start up and beginner entrepreneurs such as lack of entrepreneurship culture, lack of cheap and reliable access to obtain initial credits, and the inhospitable policies and bureaucratic regulations in some of these countries.

Risk is associated with the notion of uncertainty concerning the occurrence of events that may result in loss and the extent of this potential loss. Risk has been defined as 1) variability in future outcomes, 2) chance of loss, 3) possibility of an adverse deviation from a desired outcome that is expected or hoped for, 4) variation in possible outcomes that exist in a given situation, and, 5) possibility that a sentient entity can incur a loss (Rejda 2005). Successful businesses survive and grow by taking risks and continually adapting and responding to the changing environment in which they operate. The mismanagement of risk can bring a significant cost to the firm. Managing risk is one of the primary objectives of firms operating internationally (Ghoshal 1987). Massoud and Raiborn 2003) stated that one of the most important components of a company's control strategy in global operation is managing exchange risk.

Organizational Governance is the process by which organisations select objectives, and establish processes that enable the achievement of the goals and objectives set by management including the implementation of internal controls, and procedures to monitor performance. Internal controls within the accounting information system are implemented to help ensure that risk associated with the financial management of the entity are effectively undertaken and monitored. The Treadway Commission (COSO 2004) framework identified risk management as one of the five components of effective internal control. Internal control embraces the identification and mitigation of risks (The Canadian Institute of Chartered Accountants 1995, Spira and Page 2003, COSO 2004). Ramamoorti and Traver (1998) argue that the internal audit function should be used to identify and assess risks. McNamee and Selim (1998) discussed the change from a control-based to a risk-based approach in implementing the internal

² For 27 countries in Europe

auditing function. Studies suggested that organizations often struggle with enterprise-wide risk management and lack effective risk management frameworks (Kleffner 2003, Ozier 2003). Recognising this problem COSO released the 2004 Enterprise Risk Management (ERM) Framework to identify an integrated framework identifying implementation guidelines to assist in the achievement of organizational objectives, reliable reporting, and regulatory compliance.

Risk management is a process of identifying, measuring, and minimizing uncertain or loss exposures faced by an organization and selects the most appropriate techniques for treating such exposures (Rejda 2005). Managing risks is an important part of running each and every business. In the information age, risk management requires greater attention as part of the firm's operation. This has implications for the accounting information systems since most risks can imply financial implications. New technologies have changed the business environment, companies have developed accounting information systems that utilise computerized systems within their accounting information to better meet information needs to for example, manage risk. In addition these technologies have made risk management more complex. Olson (2005) argued that there are now a wider range of stakeholders to be considered, and that the information age and technology have increased the complexity of risk management. Holmquist (2007) argued that the application of technology requires input from a number of specialists including those with IT skills, and has made the quantification of risk more difficult.

2.4.2 Risk management studies in SMEs

A substantial amount of research in risk management has focused on the larger firm. However many of the underlying principles are relevant to the smaller firm. In this section studies that have applicability to the small firm, and studies of small firms are discussed.

Every organization faces undesirable events and unwanted setbacks in its day to operations (Ariful et al 2006). Risk management is important to the small firm to be supported in their risk management. Small business needs to be aware of risk management, and the interrelationship between the roles of risk avoidance, retention and transfer (Bentley and Sparrow 1997, Sparrow 1999). Studies have argued that SME

failure is often the result of a lack of strategic management, and the failure to develop a system of controls to keep track of SME performance (see Switzer 2007). Often the SME operates with inadequate accounting systems and exhibits an inability to cope with growth. Henschel (2006) in a study looking at risk management practices in German SMEs found that the management of risks was strongly focused on owner-managers and was undertaken in a rather rudimentary way. They found few SMEs had established a comprehensive business planning system, and the link between risk management and business planning was not well developed.

There has been limited research in Thailand examining risk management practices, and, as elsewhere, what studies there are have tended to concentrate on the larger enterprises. It does appear that few small to medium sized business pay adequate attention to business risk management.

Grant Thornton International Business Report (2007)³ found that Thai businesses were weak in business risk management practices. The study found that 63% of Thai firms included in the survey indicated that risk management was a high priority, while 83% of firms indicated that they have put internal controls in place, 3% plan to put them in place, and 14% have no plans. However, in terms of the risk management function Thailand ranked 23 out of the 32 countries. This study focuses on the larger firm only then it could be argued that it is likely the smaller firm is less proactive in risk management.

Requirements for long term business success are, regardless of size, to understand, prepare for and have contingency plans in place for the major risks that confront their business. Thai companies with inadequate risk management procedures should seriously consider getting some help to identify and prioritize their risks and to establish an approach to reduce and mitigate against major risk events (IBR 2007). However, some Thai companies have realized the need for better risk management practices and, in many listed Thai companies, like PTT Public Company Limited (PTT) and The Siam Cement Public Company Limited (SCC), risk management committees have been appointed. According to SCC annual report (2008), the organizational structure is created to suit a business plan, with clear responsibility outlines, good corporate governance, and systematic risk management. Also, the regulations,

³ Based upon 7,200 businesses surveyed across 32 countries

guidelines, a procedure manual suitable for the business, an efficient and up to date computer system are provided. In order to keep up with the changing business environment, the company encourages employees to constantly follow the internal controls.

According to report of Small and Medium Enterprise Development Bank of Thailand (2004), SME Bank has made progress in the development of the Bank's risk management system, in response to rapid changes in the market and economic environment, and to changes in the Bank's internal management to become the leading bank for SME development that can respond swiftly to government's directives.

The IBR 2007 surveys shows significant improvement just over the past two years with a total of 79% now implementing a risk management approach compared to 48% of respondent firms in 2006. This suggests that firms have an improved understanding of the complexities of risk management not necessarily that improved practices are being implemented. For example, between 2006 and 2007 the number of Thai firms indicating that they have a 'formal risk management plan in place fell from 30% to 11% of respondents, while those indicating that they had a 'limited scope plan' rose from 18% to 68% of respondents. Positively the percentage of firms indicating that they had no plan to implement a risk management plan fell from 42% to 14%. The identified approached to risk management is shown in Table 2.3.

Table 2.3 Implementation of risk management

	Risk management practices in place			
	Formal Plan	Limited scope	Plan to implement	No plan to implement
2006	30%	18%	10%	42%
2007	11%	68%	7%	14%

Source: Grant Thornton International Business Report (IBR) 2007

A major identified business risk for Thai business is the risk of fraud. A study by KPMG 2007 found that increased corporate fraud is to be expected both in the number of cases and in the probably financial losses that will occur. This study revealed that the incidents of corruption and bribery (24%) and accounting fraud (17%) were significantly higher in Thailand.

2.5 Internal control

In order to ensure that the organisation's objectives are achieved and all activities are properly controlled, organization need to have strong internal control to help moderate the possibility of mismanagement. The meaning of internal control in business context and some studies related are presented in the next section and as well as internal control practices in SMEs is demonstrated.

2.5.1 Internal control in business

Internal control is an integrated process of checks and balances established by management to provide reasonable assurance that firm's resources are protected, to prevent and detect intentional and unintentional errors, and to reduce risk. Internal controls, no matter how well designed and operated, can provide only reasonable assurance regarding the achievement of company's objectives. No matter how small or big company they should have internal controls in place. Internal controls reduce both internal and external risks of doing business and support the company as it strives to meet its goals and objectives (COSO 1992). Internal control includes all of the policies and procedures adopted by the directors and management of an entity to assist in achieving their objective of ensuring, so far as practicable, the orderly and efficient conduct of its business, including adherence to internal policies, the safeguarding of assets, the prevention and detect of fraud and error, the accuracy and completeness of the accounting records and timely preparation of reliable financial information. Internal controls may be incorporated within computerized accounting systems. However, the internal control system extends beyond those matters which relate directly to the accounting system'' (SAS 300, APB, 1993).

Many small business owners forget record keeping until the end of the year, when they must file taxes. Getting behind in the record keeping is a serious problem for some. Wells (2003) stated "Reasonable internal controls are critical in a small business. A CPA can review the existing system and make recommendations for improvements (p.27)". Internal control is not only an integral part of good management, but also drives performance and creates value for organization. As well as internal control helps management to design, implement and maintain controls and then internal audit ensures

that management sticks to them (PAIB 2007). In the next section, internal control practices in SMEs are presented.

2.5.2 Internal control practices in SMEs

Like the larger firm the SME requires an internal control system to monitor their business operation and analyse whether they are achieving their business goals. The Association of Certified Fraud Examiners (2004) found that 48 percent of theft and fraud occurred in small businesses with fewer than 100 employees. Thirty-three percent of all fraud involved billing schemes, and 33 percent involved cheque tampering. Overall, nearly 93 percent of all frauds were related to asset misappropriation. According to the KMPG Singapore survey report 2004, the results show that the majority of frauds impacting on SMEs are committed by employees, often long serving and trusted. The survey indicated that the frauds were most often discovered by internal controls. Further, internal control failure was the most common reason for the fraud occurring in the first place, with 63% of frauds attributable to poor internal controls or the override of those controls.

Hobbs (1985) suggested the lack of efficient internal control in small business could be attributed in part to:

- Personnel with limited financial and accounting skills and experience.
- Little segregation of functions because of the small number of employees.
- Easy access by employees to assets.
- Informal procedures and weak systems of reporting, analysis, planning and control.

One of the issues is that most small business cannot afford an internal audit department, so checking becomes the responsibility of another, often the owner-manager, and this is just one of many tasks that must be performed (Moser and Ameen 1976, Hobbs 1985, Rundle 1988, Davis 1991).

Risk management and internal control are two sides of the same coin (PAIB 2004). Implementing many of concepts surrounding internal controls, for example segregation of duties, may not be practical or even possible in some cases. Consequently, the current internal control structure of many small businesses fosters an environment in

which too much risk is present. This, together with the presence of computerized accounting software, can often lead to unsuccessful results for small business owners and managers.

The aftermath of the Asian financial crisis highlighted, amongst other things, deficiencies in internal control practices by firms in Thailand. Alba et al (1998) argued that a lack of transparency in disclosure and of a solid base of financial information due to structural deficiencies within the information system contributed to the problems experienced at the time of the Thai financial crisis. Jelatianranat (2000) argued similarly that Thailand had not been aware of and was not practicing good corporate governance principles.

2.5.3 A link to risk management

Internal control is about risk management. It is the checks and balances in place to ensure that the financial records are able to achieve the objectives set by the firm. However well conceived and applied these procedures may be, though, internal control cannot prevent all errors.

In order to contain damages brought about by the financial crisis, the Thai government had rushed to start financial structural reform, foster the implementation of good corporate governance practices and to implement accounting and auditing reforms. These were promoted and implemented for both public and private sectors (Jelatianranat 2000). In term of private sector, since most business firms in Thailand are family owned and financed by family owned money the need to raise capital in the stocks market is not necessary and so any disclosure leading to what they consider as trade secrets is forbidden (Jelatianranat 2000). Lack of a strong internal control system was one of the five main areas of weaknesses of the crisis (Jelatianranat 2000). Also, it was claimed by researched that poor corporate governance was one of the major contributing factors of the Asian financial crisis in 1997 (Alba et al 1998, Claessens et al 2000, and Keong 2002).

Consequently, Thai government needs to encourage corporate governance practices in both the public and private sectors. All listed companies appointed an audit committee before the end of 1999. Jelatianranat (2000) concluded that both the public and private

sectors have made awareness and promoted implementation of corporate governance practices in Thailand.

According to Iskander and Chamlou (2000), they stated having good corporate governance in place is a source of competitive advantage and critical to economic and social progress. Solomon and Solomon (2004) recommended that corporate governance is the system of checks and balances, both internal and external to companies, which ensures that companies discharge their accountability to all their stakeholders and act in a socially responsible way in all areas of their business activity. In Thailand, the National Corporate Governance Committee (NCGC) defined corporate governance as a system having a corporate control structure combining strong leadership and operations monitoring (NCGC, 2005).

In sum, a combination of the utilisation of technology to operate business systems and the presence of good corporate governance would help management manage risk and internal control. Underlying each is the quality of the financial system in the organisation. Role and importance of information technology in small business is presented in the next section.

2.6 Role and importance of information technology in small business

In the digital age, widespread of computers, information system advances positive effects on every organization in facilitating creation, production and administrative efficiency. For instance, electronic commerce helps distribute goods and commodity in a more effective manner resulting in a shorter product life cycle. In this circumstance an entrepreneur is required to launch new products into the market. Without an ability to adapt itself in a timely manner, an organization may come across strategic challenge and crisis. Consequently, SMEs are needed to enhance their competitiveness and competitive advantage, such as in aspects of entrepreneurship, technological development, production, marketing and financial management.

This study investigates the use of information technology within the Thai SME, the role that information technology plays within the accounting information system (AIS) and issues of risk management within the internal control system. A comparison is made between SMEs that are a part of the Initial Public Offerings (IPOs) group and those that

are not (the non- IPOs group). The two groups can be distinguished on the basis that the IPO SME is listed on the Market for Alternative Investment (MAI), and the non-IPO is not listed. It is expected that there will be differences between these two groups in terms of size, their use of information technology within the accounting information system, the role for which they use the accounting information system and the approach taken to risk management within the accounting information system.

Research has generally focused on the adoption of information technology within business (Judy *et al* 2000, Harper & Utley 2001, Wang *et al* 2004, Lai *et al* 2005, Subroto & Sivakumar 2007). However, there has been little research focused on the adoption of information technology within the accounting information system in small business.

Information technology has come to play an increasing role in business today. Technology has played a role in enhancing revenue streams, in reducing production costs, and in providing relevant, reliable and timely information for the efficient management of a business enterprise. Information available can be used by the firm to assess its risk profile in the identification of potentially disruptive events, distinguishing between business segments, locations, policies and contracts. This information can assist in reducing the level of uncertainty and afford support to strategic decision-making (Smith, 2000).

While information technology within the accounting information system is able to support business operations both in day to day and in longer term planning the focus of SMEs has tended to be on shorter term day to day management. Welsh and White (1981) found that most SMEs adopted a short-term management perspective relying on the accounting information system for day to day management decisions rather than longer term/strategic planning. Seventeen years later Kuncoro (1998) similarly argued that finance departments needed to spend less time tweaking transaction processing systems, and work harder to produce analyses that assists line managers make sound competitive decisions quickly and effectively. More recently Schubert (2006) found in a study of Swiss SMEs that 87.1% of respondents believed that technology could and should be used to achieve the objective of smoothly operating the business, 79% believed that the adoption of information technology assisted in reducing processing time. The majority of the SMEs state that employees have access to required

information at any time (79.4%). Eighty five percent of SMEs agree that they have access at anytime to decision relevant information. Schubert and Leimstoll (2007) results confirmed earlier findings in other studies that SMEs tend to use computers mainly to support operational or administrative tasks, rather than for strategic decision making purposes (Raymond&Thalman-Management 1982, Duschinsky&Dunn 1988, Yap *et al* 1992, Wilson&Sangster 1992, Chen&Williams 1993, Foong 1999). Mohamed (2006) found that 80 per cent of business owners of SMEs in the UK believe that IT innovations are a key to growth. The SME does need quality information to enable accurate planning and decision making for the future in order to compete in local market and global markets. Information needs to be update, accurate, and timely (Bressler & Bressler 2006). Appropriate information technology within the accounting information system can help SMEs adjust their internal processes to improve core business processes and reduce costs.

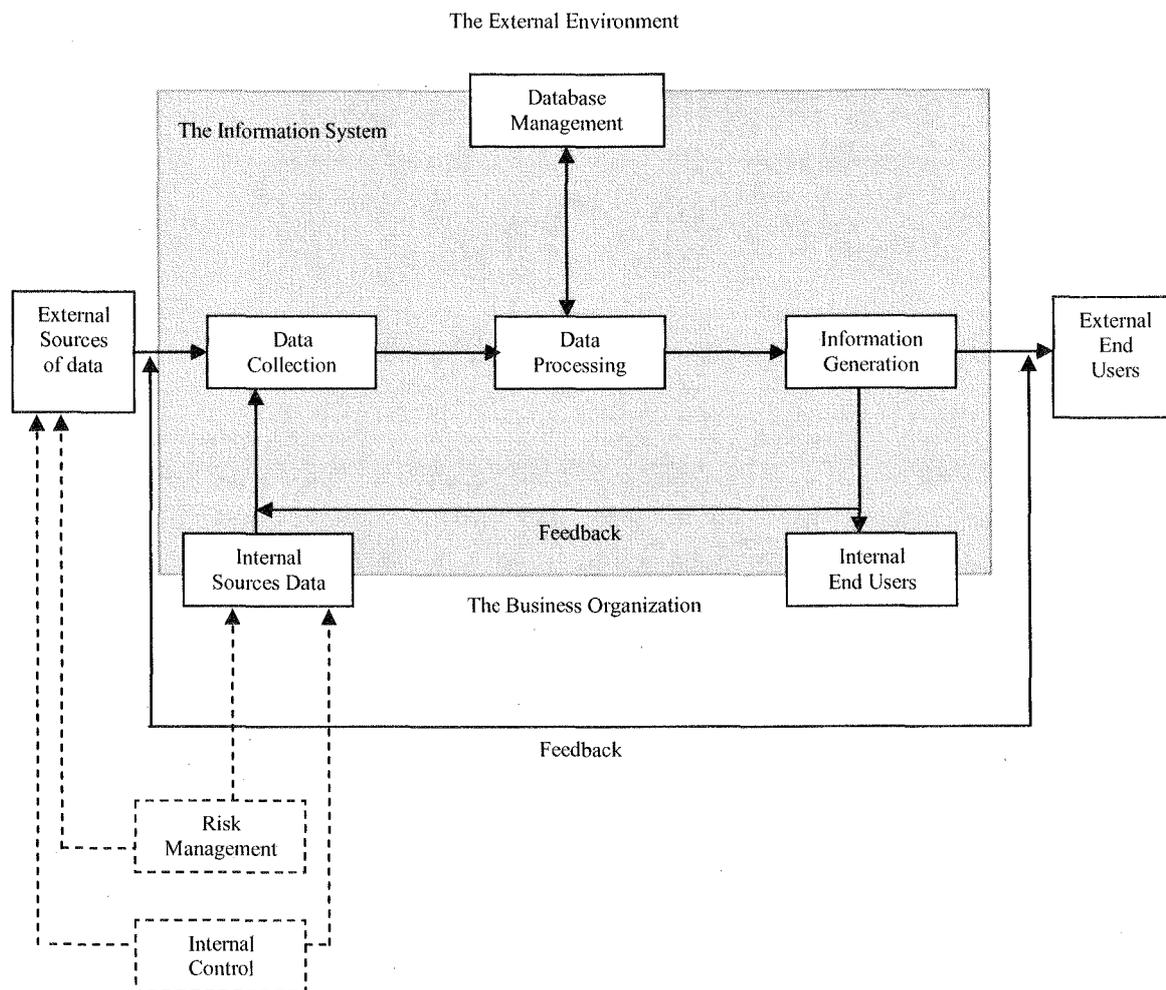
In terms of the adoption of information technology Hall (2007) noted that the manual process model is the oldest traditional form of accounting information system and is still being used by many small businesses. Breen *et al* (2003) conducted research in Australia on the use of Computerized Accounting System (CAS) within small business. They found 54.9 percent of small business use the Mind Your Own Business (MYOB) accounting software package, followed by Quickbooks (24.6%), Cash Flow Manager and Attache (both 2.5%). Eighty-nine percent of respondents satisfied and agreed that the software package helped make their business more efficient, 86 percent of CAS users stated that this software has helped them cope with the requirements of the GST. Also, 86.1 percent of users believed the software had a positive impact on the business. In earlier studies. Smith (1999) considering the role of information technology and the management information system in small business found that information technology improved the speed and reliability of information available within the organization. Dandridge and Levenburg (1999) found only 20 percent of respondent small firms reported having their own web site, 62% started using the internet for products or information purpose after 1989 and the frequency of use of the internet increased as the number of employees within the organization increased. Burgess (1998) found 65-76% of Australian small businesses had adopted computers and the main software application package used was accounting.

The NITC (2003) reported that many non-IPO SMEs in Thailand were using a manual accounting system, and others had adopted an approach combining manual and computerized accounting systems. The Thai government has promoted, and is promoting the utilization of information technology among SMEs. The encouragement has sought to have SMEs adopt basic software programs to perform functions of accounting, finance, administration, and production management (NITC 2003). It is argued that information technology allows systems to function at faster speeds, operate more efficiently and reduce space problems. One of the objectives of this study is to explore the degree to which SMEs in Thailand adopt information technology within their accounting system.

2.7 Risk, internal control and the Accounting Information System

Small businesses are at risk to fraud because they often do not have effective internal controls. Typically they have few staff to check the operation of, the effectiveness of or the procedures and system in place assuming that internal control procedures are in place. Usually there is no external audit of the internal control system. SME owners or managers must handle internal control failure and must be attentive to the need for internal control to maximize business potential and minimize the risk of fraud, error and loss. In order to discourage errors and identify mistakes and to detect risks caused by adoption of information technology within accounting information system, adapting Hall (2007) model with risk manage and internal control. This relationship is shown in Figure 2.1.

Figure 2.1 Relationship between accounting information system model and risk management and internal control system



This model consists of four stages- data collection, data processing, database management, and information generation. Since data Collection is the most important stage in the system, transactions errors should not pass through data collection stage. Otherwise, the system may process the errors and generate unreliable output which could lead to incorrect actions and poor decisions by the users (Hall 2007). Therefore, company should have risk management and internal control in place.

2.8 Accounting information system

The essence of an accounting information system is the provision of a framework that enables the collection, storage and subsequent reporting of events that describe the economic/financial condition of the firm. It is composed of people, equipment and other resources that provides the framework to allow the accumulation, classification,

and processing of transaction data in a form that can then be presented as information for analysis, and communication, primarily of a financial nature, to meet the decision making needs of internal and external stakeholders. Implicit in this system is the provision of adequate controls to safeguard the organization's assets, including data (Romney and Steinbart 2000). Information is a valuable asset of the firm. Business success and survival depends on the accuracy, integrity and continued availability of critical information. Data extraction and portability between existing software applications are important to make information more accessible and useful. It is important that the accounting information system provide management of the firm with the information that is required to manage the organizational activities of the firm in an efficient and effective way. This information must be relevant and reliable, it must be accurate and objective and available in a timely manner. In achieving this technology within the accounting information system has a significant role to play.

There are few SME studies in Thailand that have emphasized the accounting information system or the application of technology specifically. Prior work has emphasized the listed company considering such impact as ownership structure on corporate performance (Yammeesri 2003), the relationship between Thai accounting information and Thai security prices (Graham *et al* 2000), financial distress in listed companies using macro and micro variables (Tirapat and Nittayagasetwat 1999) and variables involved in predicting bankruptcy for finance companies (Person 1999). A major objective of this has been to redress this gap in knowledge.

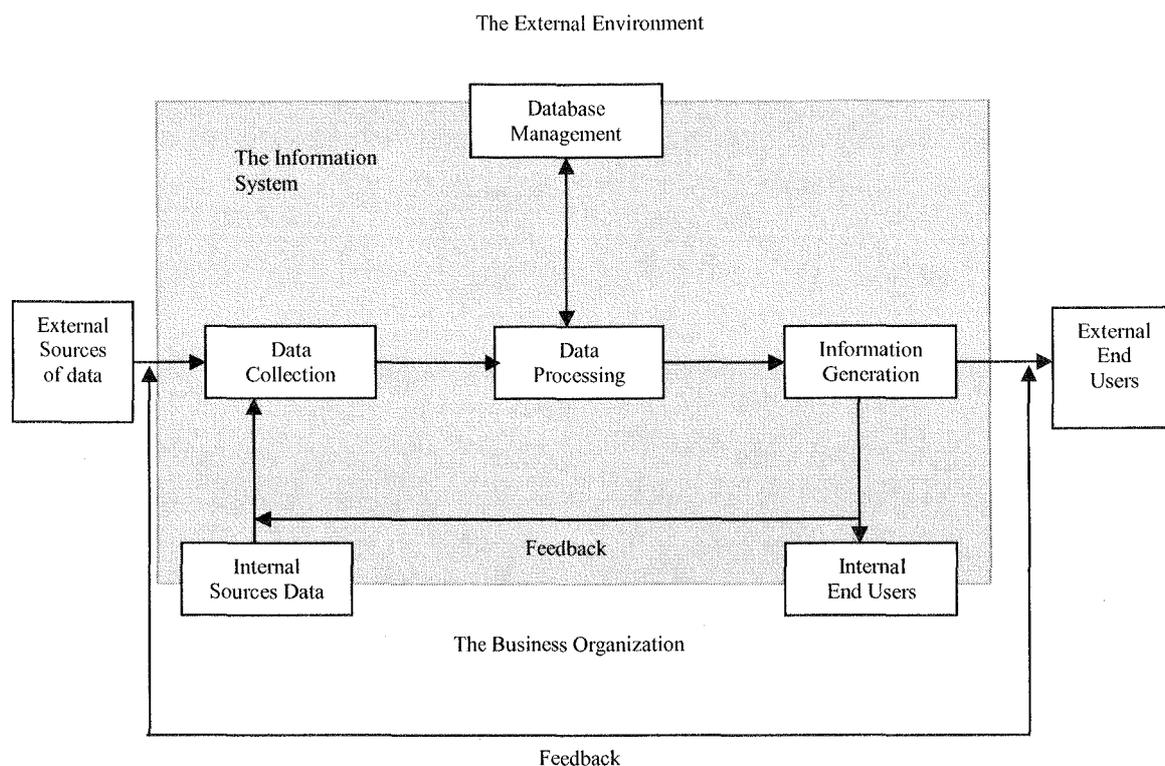
Today in considering the accounting information system, internal control and risk management it is difficult to view them independently of the role information technology does or should play, even in the case of the small SME. SMEs, like any other business organisation, are expected require more information, because they are exposed to uncertainty in their environment compared to larger firms (Mohamed 1998). Within the accounting information system information technology is able to play an important role from data input through to information output leading to decision making by the SME in seeking to improve productivity, quality and performance. Technology provides for the utilisation of advanced accounting techniques and allows more varied reporting using a variety of analytical techniques as compared to labour intensive manual methods (see Rogers 1983).

In the present day technology plays a significant role in the AIS as computerisation of this activity has commonly been adopted. Technology has provided a means to improve the quality and quantity of information, as compared to a manual system, in terms of relevance, reliability, speed, timeliness, error reduction and options for presentation. For example, Breen *et al* (2003) found that information generated by a computerized system assisted the small firm in making more efficient business decisions and meeting compliance requirements such as that imposed by the GST system. Technology plays four major roles, these are data gathering, manipulation, storage, and document preparation. This activity results in the transformation of the data into information, and prepares the information for users both inside and outside the firm (Gibson 1963 quoted in Thomas & Evanson 1987, Lothian 1976, AICPA 1977, and Mcleod 1995).

A firms accounting information system can vary in complexity from a manual system in the smaller firm to a system reliant on technology or combining the features of both manual and technological systems. Whatever approach or combination is adopted the accounting information system will be composed of people, equipment and other resources that provide the framework for the accumulation, classification, and processing of transaction data in a form that can then be communicated and presented as information for analysis, primarily of a financial nature, to meet the decision making needs of internal and external stakeholders Hall (2007).

Hall (2007) discussed the accounting information system as composing seven elements: end users, data sources, data collection, data processing, database management, information generation, and feedback as shown in Figure 2.2.

Figure 2.2 Modelling the Accounting Information System



End Users are classified into internal and external users. External users include creditors, stakeholders, etc. Internal users include management at every level of the organization, as well as operations personnel. Both groups are informed by a generated reporting related from the organization.

Data Sources are financial transactions that enter the information system from both external sources (such as sale of goods and services, the purchase of inventory, payroll, the receipt of cash) and internal sources (such as exchange or movement of resources in organization).

Data Processing is required to produce information. Tasks in this stage range from simple to complex.

Database Management involves three fundamental tasks: storage, retrieval, and deletion. The store task assigns keys to new records and stores them in their proper location in the database. Retrieval is the task of locating and extracting an existing record from the database for processing. Once processing is completed, the storage task

restores the updates record to its place in the database. Deletion is the task of permanently removing obsolete or redundant records from the database.

Information Generation is the process of compiling, arranging, formatting, and presenting information to users, such as a sales order, a structures report, or a message on a computer screen. Regardless of physical form, useful information has characteristics of relevance, timeliness, accuracy, completeness, and summarization (Hall 2007).

Feedback is a form of output that is sent back to the system as a source of data. Feedback maybe internal or external and is used to initiate or alter a process (Hall 2007).

Data Collection is the most important stage in the system and the first operation stage in the information system to ensure that even data entering the system are valid, complete, and free from material errors (Hall 2007).

Various studies have found mixed results for the adoption of technology within the accounting information systems of SMEs. Ismail *et al* (2003) surveyed Manufacturing-based Small and Medium Enterprises in the Northern region of Peninsular Malaysia to determine the status of computer-based accounting systems (CBAS) adoption. Results showed that almost 92% of the SMEs had adopted CBAS, though 62% had adopted a mixed system (manual and computerized). Moriones *et al* (2005) in a survey of ICT adoption by 337 Spanish firms found that the adoption of information technology was driven by the size of the firm and the extent of foreign investment. The larger the firm and the greater foreign investment the more likely the firm were to adopt information technology. In an earlier study, Powell and Xiao (1996) found that more than 94% of companies had computerized accounting system though 50% had only partly integrated IT applications in the accounting information system. The results showed that the extent of computerization was greater in larger companies than the small and medium companies.

There has been little research undertaken to explore technology and the accounting information system in SMEs in Thailand. Previous research has emphasized information systems and e-commerce. Art-Erm and Chiamsiri (2002) undertook

examination of SMEs adopting E-Commerce. Panyasorn *et al* (2004) explored the use of Lotus Notes in Thai SMEs. Art-Erm (2002) and Intrapairot and Srivihok (2003) investigated E-Commerce opportunities for Thai SMEs. Generally, Thai SMEs perceive technology as the information of the arrival of new machinery and production technology within their industry. A survey completed by the Office of Small and Enterprises Promotion, found that computers are not used for electronic commerce purposes as much as they should. In general, Thai SMEs tend to only use computer software in relation to accounting and financial aspects. Besides that they also use (slightly) other programs for production and product selling such as Electronic Data Interchange (EDI). This study adds to the body of research by investigating the adoption of information technology within the accounting information system in Thai SMEs by making a comparison between the IPO and non-IPO SMEs in Thailand.

Accounting information is only useful if it can be shown to be relevant and reliable (Smith 1996). In this context internal controls within the accounting information system become important to ensure that information meets these criteria. In the next section, the relationship between internal control and accounting information system will be presented.

2.9 Internal control in the management information system specifically the AIS

An organization consists of three main subsystems: management, operation, and information systems. To ensure that the goals of each system are achieved, to mitigate the risk of exposure to harm, danger or loss and to provide reasonable assurance that legal obligations are met, management must place controls in place for each (Gelinas & Oram 2008). Internal control is a major part of this control system. These are controls that are put in place by an entity's board of directors, management and other personnel to provide reasonable assurance that the organization will be able to achieve its objectives. The achievement of these objectives is the integration of the activities, plans, attitudes, policies, and efforts of the people of an organization working together.

In accounting systems, internal controls may be incorporated to ensure that employees are doing their jobs properly and the system that run properly. The internal controls are the checks that are placed in the system of the firm. The Auditing Practices Board

(APB) argued that internal control comprises the control environment and control procedures. It includes all the policies and procedures (internal controls) adopted by the directors and management of an entity to assist in achieving their objective of ensuring, so far as practicable, the orderly and efficient conduct of its business, including adherence to internal policies, the safeguarding of assets, the prevention and detect of fraud and error, the accuracy and completeness of the accounting records and timely preparation of reliable financial information (APB 1995a) .

The Information Systems Audit & Control Association (ISACA) issued Control Objectives for Information and Related Technology (COBIT) published in 1996 and revised in 2005 to provide guidance to managers, users, and auditors, relating to the best practices for the management of information technology. In this framework internal control is defined as the policies, procedures, and organizational structures designed to provide reasonable assurance that business objectives will be achieved and that undesired events will be prevented or detected and corrected in an information technology environment. The intent of this framework was to align information technology with the objectives of the business, to maximize benefits of information technology to the business, to encourage the responsible use of information technology resources, and to manage information technology risk appropriately (COBIT 1996).

As with larger businesses attention to internal controls is important to the smaller business. The management task of selecting strategies, implementing decisions, monitoring, and evaluating is present as it is for the larger entity. The scale and importance of issues may differ but vigilance is equally important. In the small firm the owner/manager must provide the control environment, this may change as the firm grows in size, in the future perhaps achieving IPO status. To achieve this Davis (1991) argued that the accounting system should be supported with manuals incorporating appropriate procedures, and policies, and instructions. The double entry system is adopted to put in place practices able to identify irregularities and omissions, and to provide an audit trail for later checking. For small businesses, maintaining an effective system of internal controls presents a significant challenge to management or the owner. Implementing internal controls, such as segregation of duties, may not be practical or even possible in some cases. Consequently, the current internal control structure of many small businesses fosters an environment in which it could be argued excessive risk may be present.

A study by KMPG (Singapore) (2004) showed that the majority of frauds impacting on SMEs are committed by employees, often long serving and trusted, with the main motivation being greed and lifestyle. The survey indicated that the frauds were most often discovered by internal controls. Further, internal control failure was the most common reason for the fraud occurring in the first place, with 63% of frauds attributable to poor internal controls or the override of those controls. This study indicates that concerns raised by Hobbs (1985) remain twenty years on. These concerns included a lack of efficient internal control attributed in part to personnel with limited financial and accounting skills and experience, little segregation of functions because of the small number of employees, easy access by employees to assets, and information procedures and weak system of reporting, analysis, planning and control.

2.10 Summary

This chapter provides a brief history of Thai economy, Gross Domestic Product (GDP), establishment and characteristics of Initial Public Offerings (IPO) of Small and Medium size Enterprises (SMEs) of non IPOs SMEs in Thailand. In addition, this chapter also reviews definition and overview of risk management, internal control and also related to SMEs. Also, the main focus in this study are discussed: information technology, accounting information system, internal control and, risk management in role and importance in general context and then relates to SMEs, particularly in IPOs and non IPOs SMEs in Thailand.

The research design began with the development of research questions and hypotheses, development of research instrument, pilot study, selection of samples and data collection methods, and data analysis will be presented in the next chapter.

Chapter 3

Research methodology

3.1 Introduction

In this chapter the research methodology adopted will be discussed. Issues discussed include development of the research framework, research questions and hypotheses development, sample selection, data collection methods, research instruments adopted and analytical techniques to be adopted.

3.2 The research framework

The focus of this study is on the adoption of technology within the accounting information systems of SME's within Thailand with a specific focus on internal control and risk management. As previously noted a comparison is made between the IPO and the non-IPO SME. It is expected that there will be differences between the two groups due to issues such as size of the firm, progressiveness of the owner-manager and the support that has been provided by government organizations.

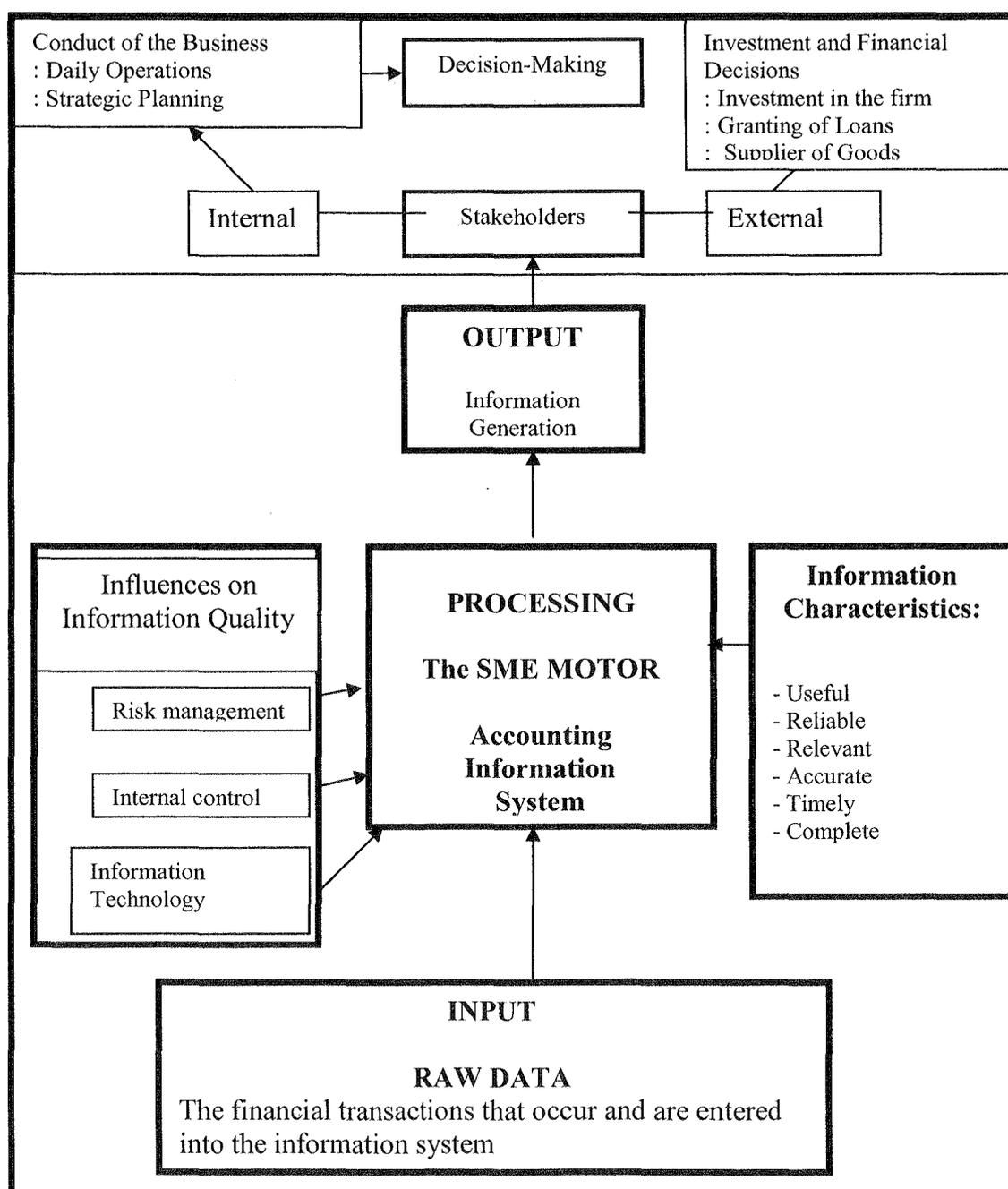
In a review of previous research much of the literature has considered directions that might be taken to investigate accounting information systems, internal control and risk, a few have ventured into model development. For example, Hunton and Flower (1997) assessed the impacts on accountants and organizations of advances, particularly technological, in Accounting Information Systems. Breen *et al* (2003) and Burgess (1998) examined information technology in small business in Australia. While Nicolaou (2000) considered the appropriateness of a contingency model approach to investigating the effectiveness of the accounting information system.

Due to the significance of Breen *et al's* (2003) study, this study investigated small business usage of Computerised Accounting System (CAS) and to determine the influences in the decision making for use and not use. Also, Burgess (1998) stated approximately three-quarters of Australian small businesses use computers. This ratio

increases as the business size increases. The current study examined the adoption and utilisation of Information Technology within IPO and non-IPO SMEs in Thailand as well as studied the importance reasons of Technology usage among these two group.

Earlier research has provided useful directions for AIS research but have not examined specific research models in relation of information technology, internal control and risk management adopted in the AIS. The current study has developed a framework to address the research questions raised. This framework is shown in Figure 3.1.

Figure 3.1 The research framework



This framework depicts the accounting information system at the center of the model identifying concerns of importance that impinge on this system, namely risk management, internal control concerns and the role that technology will play. In addition it is expected that information will possess certain characteristics such as meeting the requirements of reliability and relevance in decision making. Together these will influence the quality of, and effectiveness of the accounting information system in providing the supporting information that is relevant and reliable essential to business operations. Once, financial transactions data is inputted with the use of either a computerised system or mixed or manual system into the Accounting Information System, these data are processed, classified and reported as outputs. The adequate quality generated information has to relevant and reliable, accurate, complete and available in a timely manner for decision making to meet the information needs of both internal and external stakeholders.

In the majority of organisations today transaction data is inputted with the use of a computer. Though, in Thailand many smaller businesses still operate largely manual systems. This data is processed, classified and reported as information for use by stakeholders such as manager, suppliers, and customers in decision making. This information is generated through the accounting information system. The accounting information system must be seen to provide information of adequate quality that is relevant and reliable, accurate, complete and available in a timely manner for decision making. The adequacy of internal control and attention to risk management will be discussed in the role they play in ensuring this quality of information.

3.3 Research questions

The focus of this study is to investigate the current position and the operation of the accounting information system within the SME and related issues such as the internal control system, the application of technology, and the role of risk management by comparing the IPO and non-IPO SMEs in Thailand. In doing so it is intended to highlight the strengths and weaknesses identified in the internal control systems, risk management and the application of technology by Thai SMEs.

Small firms are generally managed and owned by a sole owner or family business, and have access to limited resources, as compared to, for example, listed companies. They must rely on their internal information systems, in particular the accounting

information system, to meet their decision making needs both day to day and strategic. Due to limited resources the SME is generally not in a position to buy consulting advice or to have their financial statements audited by the large and globally skilled accounting firms yet they do need quality information to enable accurate decision making to compete in local market and global markets. Consequently, the SME manager requires information that needs to be update, accurate, and timely (Bressler and Bressler 2006). Kuncoro (1998) argued that SME owners needed to work harder to produce analyses that assist in making sound competitive decisions quickly and effectively. Information is used by a variety of internal and external stakeholders. In the case of the SME the external stakeholder would generally be of lesser importance though of importance when the SME is seeking additional resources, or for example, government assistance.

Technology plays a significant role in the accounting information system today as computerisation of this activity is common (Breen *et al* 2003). Increased application of technology in the small and medium business has also resulted from a decline in computer software prices and the availability of user-friendly computers (Zarowin 1998). Computerised applications are characterized by the presence of a high volume of transactions that require processing. In this technology play four main roles - data gathering, data manipulation, data storage, and document preparation to communicate required information.

Thai studies suggest that the accounting information systems in place and the use of the information generated for decision making are not adequate. For example, Kingkaew & Limpaphayom (2001) found that financial information was generally of both low quality and unreliable. These problems are made worse for SMEs as a result of poor record keeping, poor financial accounting procedures, often family operated without properly developed professional management practices and the accounting information available has often been inefficiently used in financial decision-making (World Bank 1978, Wichmann 1983, Ubonratchathanee University 2000, Siripunyawit 2004, Brooks *et al* 1990). Incomplete accounting records and the inefficient use of accounting information creates problems for the SMEs in accessing capital and often leads to high interest rates being imposed. The problems identified with the accounting information systems also impact on SME ability to successfully compete in international markets, to recognize the issues associated with falling sales revenue, to manage problems

associated with a shortage of and access to funds and identifying the need to effectively manage non-performing debt. SMEs that had recovered from the Asian Crisis were those that were able to update their technology, restructure their marketing strategy, lower costs, improve operations and productivity, and gain access to state assistance and financing (Phoosupphanusorn and Treeapongpichit 2002). Proper implementation of technology should improve efficiency by eliminating or minimizing waste and redundancy in the organization (Beheshti 2004).

In recognition of these issues, the economic importance of the SME and the dispersion of the SME across Thailand the Department of Industrial Promotion of Thailand (DIP) reported in 2003 that SME entrepreneurs needed to learn about and to adopt information technology in their businesses to assist in ensuring the availability of better information to improve their competitive capabilities, to assist in the reduction of business and production costs, and to provide a basis from which to manage the business more efficiently. Intrapairot and Srivihok (2003) argued to enhance the viability of SMEs they needed to shift from traditional business to digital business by adopting both the internet and e-commerce into their businesses to improve their chance of success. The adoption of technology, it was believed, would assist Thai SMEs to improve the quality of their products and management processes, as well as lower costs, to enable them to better compete with products of other countries (Mephokee and Ruengsrichaiya 2005) and to enhance both internal control and risk management practices.

In prior Thai studies involving the accounting information system or the application of technology the listed company has been emphasised rather than the SME. These studies have focused on the ownership structures impact on corporate performance (Yammeesri 2003), the relationship between Thai accounting information and Thai security prices (Graham *et al* 2000), financial distress in listed companies using macro and micro variables (Tirapat and Nittayagasetwat 1999) and variables involved in predicting bankruptcy for finance companies (Person 1999).

This study takes a step in filling this gap in knowledge by investigating the application of technology, the role of internal control and risk management within the accounting information system in Thai SMEs. A comparison between the Initial Public Offerings (IPOs) and non-IPO SMEs in Thailand is made. The main research question posed is:

What is the role of technology, internal control and risk management within the accounting information systems of IPO and non-IPO SMEs in Thailand?

To investigate this research question, the question is divided into five separate questions. These questions are discussed below and hypotheses are developed.

This study has concentrated on the utilization of information technology within the accounting information system of the SME. The intention is to identify the ways in which IPO and non-IPO SMEs utilize technology within the accounting information system in Thailand and also reviewing the importance and role of adoption Information technology within the accounting information system. Prior studies suggest that SMEs must regard IT as a strategic resource that can be used to strengthen the competitive position of the firm as opposed to a tool for automation of existing process, computerization of financial and accounting practices and improving productivity and efficiency (Beheshti 2004). The first research question (RQ1) posed is:

1. Research question 1: Do SMEs utilize technology within their accounting information systems in Thailand?

Further the following hypotheses are posed:

The first research hypothesis (H1) focuses on investigating whether SMEs in Thailand employ technology within their accounting information system.

H1 SMEs within Thailand use information technology within their accounting information systems.

The second research hypothesis (H2) focuses on investigating whether there is a difference in attitude toward the employment of information technology within the accounting information system of IPO and non-IPO SMEs in Thailand.

H2 IPO SMEs are more likely to use information technology within the accounting information system than non-IPO SMEs in Thailand.

The third research hypothesis (H3) focuses on the importance of information technology within the accounting information system of IPO and non-IPO SMEs in Thailand. Due to the larger size, and an expectation that these are growth firms the IPO SME are expected to consider the application of information to be more important than the non-IPO.

H3 IPO SMEs are more likely to consider information technology within the accounting information system to be important than the non-IPO SME in Thailand.

While researchers have considered issues related to internal control such as the probability of and impact of fraud on SMEs in Thailand (KPMG 2004), and sought to identify the key reasons for SME failure (PAIB 2007) few SME studies in Thailand that have emphasized the internal control practices in Thai SMEs. IPO SMEs are required to establish an audit committee under the Thai Securities and Exchange Commission (SEC) listing rules as a body responsible for financial disclosure and listed on the MAI market (SET, 2000), Given the listing requirements of the IPO SME it is expected that they will be more likely to adopt internal control procedures than the non-IPO. The second research question (RQ 2) focuses on internal control procedures adopted by Thai SMEs. The objective of this question was to both identify that internal control procedures were in place, and whether a number of basic internal control procedures were identified to be important.

2. Research question 2: What internal control procedures are adopted within the accounting information system by Thai SMEs?

As a result of the expected difference between the IPO and the non-IPO SME it is expected that the IPO will be more likely to engage in the development of appropriate internal control procedures within the accounting information system than the non-IPO. This is the anticipated result of listing requirements and a greater understanding of the importance of internal controls in assisting the organization to achieve its mission. In terms of general issues surrounding internal control the following hypothesis is posed:

H4 SMEs in Thailand have developed systems of internal control.

This hypothesis will test whether SMEs in Thailand do have established internal control systems. Part of this analysis will include an exploration as to whether there are regular reviews of internal control procedures and practices, whether appropriate training is offered to staff to ensure they are able to fulfill their job requirements, whether a part of staff performance evaluation is linked to the appropriate implementation of internal control processes, and whether the firm operates an enterprise risk management framework. A number of specific internal control issues are also explored. For example, are appropriate authorization and security practices in place, is review and reconciliation of transactions undertaken, are backup and recovery systems in place.

Hypothesis 5 then identified whether or not there are differences between the IPO and the non-IPO SME.

H5 IPO SMEs have developed internal controls while non-IPO SMEs have not.

The literature suggests that SMEs in Thailand adopt weak business risk management practices (see IBR 2007, Vongvipanond 2004). However, it was also noted that there were few studies that have examined risk management SMEs in Thailand. Research question 3 (RQ3) was posed to explore risk management practices adopted by Thai SMEs.

3. Research question 3: What risk management practices are adopted by Thai SMEs to safeguard the accounting information system?

In the expectation that risk management practices in SMEs will be less than adequate in Thailand, and that the practices of the IPO SME will be better the following hypotheses are posed:

H6 SMEs in Thailand believe that risk management is a priority.

- H7 IPO SMEs will indicate that risk management is more important within the information system than the non-IPO SMEs.

The final research question explores whether the information currently generated by the accounting information system is able to meet the information needs of the SMEs.

4. Research question 4: Is the information generated within the accounting information system able to meet the decision making requirements of the SME?

Hypotheses are posed:

- H8 The decision making capability of SMEs in Thailand is enhanced with the application of technology.
- H9 Technology enhances decision making within the IPO SMEs more than non-IPOs SMEs in Thailand .

In the next section the research design to be adopted in this study will be explored.

3.4 Research design for this study

This study adopts a triangulated design adopting both mail survey and follow up interviews. The study design was developed in four stages: development of the research instruments, pilot testing of the instruments, sample selection and data collection, and the approach to be adapted to data analysis.

3.4.1 Research instrument structure

Separate research instruments were designed for the mail survey and for the semi structured interviews undertaken with Initial Public Offering (IPO) and non- IPO SMEs in Thailand. It was decided to adopt a triangulated approach to increase the richness of the data collected.

3.4.1.1 Development of the mail survey questionnaire

A mail survey was developed to be mailed to the population of IPO firms and a random sample of non IPO SMEs in the Bangkok region of Thailand. The mail survey was targeted at the Chief Executive Officer (CEO) or Owner of the Initial Public Offering (IPO) SME in the Market for Alternative Investment (MAI) in Bangkok, Thailand and the Chief Executive Officer (CEO) or Owner of non-IPO SME in Bangkok, Thailand.

The first section of questionnaire was designed to collect demographic data (age, gender, education), and company profiles (industrial sector, main product) of respondents. The second section sought information about the utilisation of information technology and how accounting information is processed. Respondents were also questioned about the decision to adopt or not adopt information technology within the firm's accounting information system, and the benefits that might be obtained from the use of information technology in processing accounting information. The third section investigated the importance of actions taken to minimize risk arising from the accounting information system. In the second and third section a 5-point likert scale was adopted to gain a sense of the importance managers attached to each question. The final section of the questionnaire sought to identify the perceived efficiency of the accounting information system in supporting the firm's financial decision making, and providing information in a competitive environment. Again a five point likert scale was adopted to assess the degree of efficiency perceived by managers.

This questionnaire was to be administered by mail. This method was chosen as it is a cost effective approach relative to other methods and offered the opportunity to access a relatively widely scattered sample across the Bangkok region of Thailand. It is a method which is convenient for respondents as they can complete the survey in their own time and provides greater respondent anonymity. While there are disadvantages of mail surveys, the survey was to be complemented by interviews. It was felt that this would alleviate some of the risks associated with mail surveys such as the risk of low response rates, the difficulty in verifying who actually completed the survey, the lack of investigator involvement in data collection (American Statistical Association, 1997). If the response is low, Sekaran (2003) suggests that sending follow-up letters, providing the respondent with self-addressed, stamped return envelopes and keeping the questionnaire brief are useful ways to improve the rate of response.

The issue of non-response can be a problem in mail surveys (Aaker, *et al* 1998). In this study a number of approaches were adopted to minimize the impact of this potential problem. The questionnaire was kept as compact as possible, and was piloted for ease of reading. In addition a formal cover letter was included identifying the reasons and importance of the research endorsed by the president of Naresuan University who is well known and respected within the business community in Thailand. As far as possible the cover letter was personalized to respondents, anonymity guaranteed, deadline dates specified and clear directions to completion specified. Two follow up postings of the questionnaire were made, at three weekly intervals, in an effort to raise the response rate (Cooper & Schindler 2006, Goldstone & Kroll 1957).

3.4.1.2 Development of the semi structured interview

The mail survey was followed by a number of semi structured interviews to assist in enriching the data collected. A semi structured interview technique was chosen to collect qualitative data. This approach was adopted to allow the interviewees the opportunity to expand on their views to the questions formally asked.

The semi structured interview consisted of two sections. The first section of interview was designed to collect interviewees' detail such as name, job title, organization name, and date of interview which was completed by the interviewer. The interviewees were asked a series of eight questions in the second section of interview. These questions sought to gather information regarding the firms accounting information system, the role of technology within the firm specifically as related to the accounting information system, how technology might assist in the financial decision making process, the firms approach to risk management specifically in relation to the accounting information system and internal control procedures and finally, how interviewee's saw the performance of their accounting information system in financial decision making in comparison to their competitors.

3.4.1.3 Translation of the research instrument

In order to be certain that the desired respondents would understand the data collection instruments it was decided to translate the cover letter, instructions, consent forms and data collection instruments to Thai. In undertaking cross-cultural research it is important to translate the, research instruments into the local language (Sekaran 2003) to enhance the research instruments reliability and validity in the culture studied (Munet-Vilar'o & Egan 1990). Usunier (1998) noted that the ignorance of language in cross-cultural studies could result in biased and impoverished findings. Consequently, validation of the translated instruments and quality of translation is important in ensuring that the results obtained in cross-cultural research are not due to error in translation, but rather are due to real to the phenomena being measured.

The process of instrument translation can be approached in a variety of ways. For example, Brislin *et al* (1973) recommended four techniques: back-translation, bilingual techniques, committee approach, and pre-test. In back-translation, a target language version is translated back into the source language in order to verify translation of the research instrument. The bilingual technique involves testing both source and target language versions among bilingual respondents in order to detect items yielding discrepant responses in the two versions. The committee approach is the use of a team of bilingual people to translate from the source to the target language. In pre-test procedures, a pilot study should be carried out after instrument translation is completed in order to ensure the future users of the target language version can comprehend all questions and procedures (Brislin 1986).

The research instruments for this study - the mail survey and semi structured interview questions - were prepared in English and then translated to Thai as the study was to be conducted in Thailand. The back-translation method has been recommended by experts on cross-cultural research and was adopted in this study as the primary technique (Champman & Carter 1979, Brislin 1970, and Werner & Campbell 1970). However, Brislin *et al* 1973 recommended the use of multiple techniques). As a result in this study the back translation technique was adopted followed by a pre test technique.

The research instruments were first translated to Thai by the researcher. The English and Thai versions (after Tang & Dixon 2002) of all instruments were then carefully compared and reviewed by Thai lecturers who teach English language in Naresuan University. The researcher incorporated recommendations from these reviewers into the next draft of the instruments. Subsequently, to further check the integrity of the translation an independent Thai-English speaker was requested to confirm the previous review. There were no significant issues in translation identified.

3.5 Pilot study

Churchill (1995) stated that: 'Data collection should never begin without an adequate pre-test of the questionnaire'. The pre-test is the use of questionnaires on a trial basis on a small number of respondents to check question content, wording, sequence, layout and any flaws in the questionnaire so that all corrections that are necessary can be made before the real survey (Malhotra 2000). Following the back translation process, a pre-test of the Thai version of both the questionnaire and semi-structured interview were conducted by five Thai academics who are member of School of Accounting and Management, three lecturers from Naresuan University, one from Payap University, and one from Chaing Mai University in Thailand, in order to examine whether the question items proposed in the questionnaire and interview guide were clear and understandable, whether the instructions for completing the survey and providing data is free of ambiguities, and whether the time allowed to complete the survey is adequate (Burns, 2000 and Cohen *et al.*, 2000). Furthermore, five owners of SMEs in Chaing Mai province in Thailand agreed to take the pre-test for this study.

The recommendations of the pre-test procedure provided necessary feedback for the improvement of the question items and instructions. The results of pilot study indicated that there were too many questions in Question 12, section 2 of questionnaire, and were not related to the research question. Also, question 15 in section 3 of the questionnaire needed to be expanded to embrace the research question regarding the issue of risk management appropriately.

Finally a number of the pre test respondents suggested that the time required to complete the questionnaire was too long, that some technical vocabularies were not clear. For example, question 13, section 2, respondents could not understand what 'instant real time information' and 'interactive processing' meant.

Based on the results of pilot study, all of the recommendations were considered by the supervisor and researcher before adopting the final survey instruments.

3.6 Validity and reliability of the research instruments

Pre-testing also served to test the validity and reliability of the instruments. Cooper & Schindler (2006) commented that an instrument is valid to the extent that the test measures what it is actually intended to measure. Instruments have content validity if they provide clear and understandable questions and cover the concept of the study (Zikmund, 1997, Nunnally, 1978). It is important to be assured that the respondents will understand the questions and respond to the question in the way the study intends. Content validity (face validity) of this study was checked by discussing the interview questions (qualitative method) and the content of the questionnaires (quantitative method) with three accounting academics who are experts in the area of accounting information systems and management in Thailand and five owners or managers of SMEs, in order to confirm that these instruments were suitable for the intended participants. Also, this procedure confirmed that the estimate of the time required to complete the questionnaire and semi interview were reasonable. Minor changes were made to ready the instruments for implementation.

The mail survey and the interviews were conducted in Thailand. Mail surveys were posted in Thailand, after 3 weeks a follow up questionnaire was sent. Interviews were conducted in the respondent managers companies' offices in Bangkok. The interviewees were the CEO or owner of the SMEs. A guarantee of confidentiality was undertaking with each company.

3.7 Ethics approval

Ethics approval was required before conducting the mail survey and undertaking interviews. The Ethics Minimal Risk application was submitted to the Social Sciences Human Research Ethics Committee (Tasmania) Network of University of Tasmania. In addition, the research proposal, a coversheet, interview questions and questionnaire for the mail survey were provided and attached. Approval of the application had to be granted by the Social Sciences Human Research Ethics Committee (Tasmania) Network of University of Tasmania to ensure the safety, liberty and rights of participants before conducting the interviews and mail survey. That approval was granted on 27 April 2006 (Ethics Ref No. H0008834)

This is important in studies which deal with human subjects. The study must ensure that no one suffers as a result of participation and the researcher will avoid disclosing the identities of those involved. The respondents should understand the purpose of the study, procedures, risks and discomforts, its benefits and the right to withdraw (Burns, 2000).

A cover sheet for the mail survey was provided and attached to the questionnaire to clarify the objectives of the study. Intended participants were informed that under the research ethics rules, their participation was entirely voluntary and that there were no risks, such as legal, psychological, moral or other risks. In addition, if they felt that the study was intrusive or they were reluctant to answer questions, they could withdraw at any stage of the process.

The semi-structured interviews also had to be conducted with the interviewees consent. Before conducting the interviews, the aims of the project and the ethical rules had to be explained to interviewees as is the case with mail surveys.

3.8 Selection of samples and data collection methods

This study involved a triangulated approach in gathering data. A mail survey was administered to two hundred firms in the Bangkok region of Thailand, followed by a small number of semi structured interviews to enrich the data collected through the

mail survey. The Chief Executive Officer or owner of the non-IPO and IPO SMEs in Bangkok were requested to complete the mail survey, and also were selected to participate in the semi structured interviews.

3.8.1 Selection of the sample

In this study the sample was selected from IPO and non-IPO firms in the Bangkok region since the majority of IPOs are located in this region, selecting both samples from this region assisted in ensuring that the target respondents, IPO and non IPO SMEs, faced similar regulations, policies, infrastructural support and environmental conditions (Kotey 1999), and this approach, adopting area sampling, has been recommended to overcome time and resource constraints when administering a large number of questionnaires (Cooper and Schindler 2006). IPO SMEs are those firms which have entered into the market for alternative investment (MAI) and those which have not are termed non-IPO SMEs. SMEs were located in Bangkok and the metropolitan area.

In selecting the sample for this study the total population of IPO SMEs, listed by the MAI (June 2006), was selected. This gave a sample of 36 SMEs. Due to the size of the population of non-IPO SMEs in Thailand identified from the directory of the Institute for Small and Medium Enterprises (ISMED) website (<http://sme2.ismed.or.th/alliances/index.php> retrieved 14 June 2006), it was decided to adopt systematic random sampling to allow the selection of a random sample of 200 non IPO SMEs from the total population 42,900 companies. The systematic sampling approach is an alternative probability sampling approaches. In this approach, every k th element in the population is sampled, beginning with a random start of element in the rang of 1 to k . The k th element is determined by dividing the sample size into population size to obtain the skip pattern applied to the sample frame (Cooper and Schindler 2003). To draw a systematic sample:

- Identify the total number of elements in the population.
- Identify the sampling ratio (k = total population size divided by size of the desired sample).
- Identify the random start.
- Draw a sample by choosing every k th entry.

In this study, randomly selected the number was 100 and the k is 215. In order to select the sample, start with the 100th unit in the list and take every 215th unit. So it would be sampling units 100, 315, 530, 745, and so on to 42,900 and end up with 200 units in this study sample. Systematic sampling has specific advantages such as easy to select and no a highly trained expert needed to select (Groebner and Shannon 1990). Additionally, a frame is not always needed (Ghauri and Gronhaug 2005). Additionally, the systematic sampling is its simplicity and flexibility (Cooper and Schindler 2003).

In term of interview sample and selection, the researcher attached a preference to attend a semi structure interview form for this study with the questionnaire. There were two non-IPO SMEs and two of IPO SMEs respondents who willing to attend the interview. Therefore, all of them were selected to be a sample of the semi structure interview for this study. The summary of the sampling is shown as Table 3.1

Table 3.1 Summary of sampling for IPOs and non-IPOs

	IPO SMEs	non-IPO SMEs	Total
Selecting for mail survey	36	200	236
Interview	2	2	4

3.8.2 Data collection

In this study a mail survey for quantitative data collection method and face to face of semi structure interview for qualitative data collection method. Data collection conducted in two phases: a mail survey phase, and interview phase.

In terms of the mail survey the mailed questionnaires were distributed to the CEO or owner of thirty six an Initial Public Offering (IPO) of small and medium-sized enterprises (SMEs) in the Market for Alternative Investment (MAI) and to the CEO or owner of two hundred non-IPO of small and medium-sized enterprises (SMEs) located in Bangkok, Thailand during the period June 18, 2006 – August 31, 2006.

The questionnaires developed for use in this study were sent with a cover letter and a postage-paid reply envelop. A covering letter was addressed to CEO or owner. Due to a small number of IPO SMEs, a follow-up telephone call was made approximately a

month after the first mail out. In the meanwhile, a follow-up questionnaire was posted to non-IPO SMEs.

Face to face interviews were adopted in this study. Face to face interviews have an advantage in that the interviewer can see how a respondent is reacting and can show the respondent items that help clarify questions and response options. Interviews allow people to answer more on their own terms than the standard questionnaire permits, but still provide a structure for the focus interview. The face to face interviews were conducted by consent of the participants. Two SMEs were selected from each of the IPO and non-IPO groups to participate in the interview stage of the data collection. Semi structured interviews were undertaken with each of the four respondents. Permission was sought and given for interviews to be taped. The researcher prepared interview questions for interviewees to ensure that interview discussions remain relevant and that all areas of interest were covered. The interviews were taped, with the interviewees' agreement, also notes taken by an assistant researcher to ensure accuracy in recording data and just in case. The raw data was transcribed and the results were initially written case by case. Cross-case analysis was then used by grouping answers from different interviewees and their viewpoints on the principal issues were analysed. The summary of data collection for this study is shown as table 3.2.

Table 3.2 Data collection process used for qualitative and quantitative approach

Quantitative approach	Questionnaires were sent to 36 CEO of IPOs and 200 non-IPOs by using mail survey.
Qualitative approach	After mail survey took place 2 CEO of IPOs and 2 of non-IPOs were chosen to conduct face to face interview by using semi structured interview.

3.9 Data analysis

The raw data from returned questionnaires was gathered and stored on computer program in term of variables (labels), data code, and values. The variables were abbreviated from the data code and these were then related to the values. Finally, the data was edited and transformed and then analyzed using the Statistical Package for Social Sciences Windows version 14.0 (SPSS 14.0). The variables, data coding, and values of the preparation of data in the SPSS for this study are shown in Table 3.3.

Table 3.3 The example of variables, data code, and values of data in the SPSS (V.14) for this study why is this table needed

No.	Name/Data code	Label/ Variable	Values
1	Role	Major role in the firm	1= owner, 2= manager, 3= accountant, 4= secretary 5= other , 9= missing
2	Gender	Participant gender	1= male, 2= female, 9= missing
3	Age	Participant age	1= less than 30 years 2= between 31-40 years 3= between 41-50 years 4= more than 50 years 9= missing
4	Education	Highest educational qualification of participant	1=Primary school, 2=High school 3=Diploma, 4=Bachelor's degree 5=Master's degree, 6=PhD 7=Other, 9=missing
5	Sector	Industry sectors operated	1=manufacturing, 2=wholesaling 3=retailing, 4=Technology 5=services, 6=Agribusiness 7=property & construction 8=other ,9=missing
6	Product	Main products and services	1=food and drink 2=advanced engineering & metal 3=digital industries, 4=chemicals 5=biotechnology 6=media & publishing 7=home and office products 8=construction materials 9=missing 10=paper and printing materials 11=automotive, 12=other

No.	Name/ Data code	Label/ Variable	Values
7	Establishment	Company establishment	1=less than a year 2=between 1-3 years 3=between 4-6 years 4=between 7-10 years 5=more than 10 years, 9= missing
8	Form	The form of business organization	1= sole trader ,2= partnership 3= company ,4= listed company 5= other ,9= missing
9	Fixed asset	Value of fixed assets in business	1= less than Baht 30 million 2= between Baht31-50 million 3= between Baht 51-60 million 4= between 61-100 million 5= more than 100 million 9= missing
10	Employee	Number of full time equivalent employees	1= less than 15 people 2= between 16-25 people 3= between 26-35 people 4= 36-45 people 5= equal or more than 46 people 9= missing
11	Acc system	Processing accounting information	1= manual system 2= computerized system 3= Mixed system 4= other , 9= missing
12	IT role1	The process transaction	1= completely unimportant 2= not important 3= not considered 4= important 5= highly important 9= missing
13	AIS1	To assess profit	1=completely inefficient 2=inefficient ,3=no considered 4=efficient , 5=extremely efficient 9= missing

In this study, descriptive statistics, such as frequency distributions, were used for analysis of data such as demographic information about respondents such as major role of respondent, gender, age, highest education qualification, industrial sector, main product or service, company establishment length, business organization form, value of fixed asset, and full time employees. Further frequency statistics and t-test were employed for analysis of data, like accounting information operated in respondents' firm, importance of characteristics of information technology by respondents, importance of roles of technology play in respondents' accounting information system, important reasons of not use technology in respondents' accounting information system, importance of factors to minimize risk arising from respondents' accounting information system, importance of roles of respondents' accounting information system, and comparison of the performance of respondents' accounting information system to respondent competitor. The results of analysis were then presented, for example tables, graphs and reports. This allowed for the interpretation and explanation of the results of the data analysis which are in statistical terms.

In term of testing hypotheses of this study, a t-test analysis (two-tail) was conducted to test whether there is significant difference between the means of two group, IPO and non-IPO SMEs, from a hypothesized value. The hypotheses were tested at level of significance of $p < .05$. This study adopted t-test command to determine whether the importance of the adoption of information technology in the accounting information system, the importance of adoption of internal control in place in the AIS, the importance of adoption of risk management in place in the information system, the efficiency of the AIS in providing information for financial decision making, and the efficiency of performance of the AIS in financial decision making compared to competitors for IPO differ from the mean for non-IPO SMEs in the same issues.

In term of analysis of qualitative data, Goetz and Le Compete (1984) stated that qualitative method is a similar analytical process to other research forms but it can give more in-depth detail than quantitative statistical process. On the other hand, there is no precise rule for the analysis of qualitative data. Patton (1990) has recommended that interview analysis be started by either case analysis or cross-case analysis.

In this study, case analysis of each interview was chosen as the starting point and this was followed by cross-case analysis (comparison of interviews). Further, interview data

were related to objectives of the study and quotations were selected to support key ideas (Mariampolski, 2001). The raw data were transcribed from cassette tape and the results were initially written case by case. Cross-case analysis was then used by grouping answers from different interviewees and analysing their viewpoints on the principal issues.

3.10 Summary

In this chapter the research methodology was discussed. In the next chapter the characteristics of the respondents of the results of the survey, findings and discussions about this study are presented.

Chapter 4

Research results

4.1 Introduction

In this chapter the quantitative and qualitative data collected in this study are discussed. Data was collected adopting both a mail survey and a small number of semi structured interviews to enrich the quantitative data collected. This study sought to investigate the use of information technology within the Thai SME, the role that information technology plays within the accounting information system (AIS) and issues of risk management within the internal control system. The quantitative data was analysed by utilising the statistical computer software programs (SPSS).

4.2 Response rate

In the mail survey a viable response rate of 41% was returned for non-IPO SMEs, and 36% for IPO SMEs (Table 4.1 listed on page 61). In the first mail out, of the sample of 200 non-IPO SMEs 46 responses were received, in the second an additional 36 responses was received giving a total of 82. Twenty-seven questionnaires (13.5%) were returned as non deliverable (no longer located at the identified address) effectively reducing the sample size to 173, raising the response rate to 47%. Fifty-three percent of non-IPO respondents chose not to respond. In terms of the IPO SMEs 13 responded on the first mail out, and no further returns were received on the second. Non-response is a common problem that occurs in mail surveys. Filion (1975) stated that non response bias in questionnaire surveys can be reduced and corrected. In this study the questionnaire was mailed to potential respondents three times, at approximately two week intervals. Additionally, the questionnaire was set out in a way that was intended to reduce time to completion and kept as short as possible based on the data required. Quantitative data was also supported by semi structured interviews: two SMEs were selected from each of the IPO and non-IPO groups to participate in the interview stage of the data collection.

Table 4.1 Summary of response rate of mail survey

Type of firm	Number of Questionnaire distributed		Response Rate	
	No. of sample	%	No. of sample	%
non-IPO SMEs	200	100	82	41
Non Deliverable (Thai Post)	27			13.5
Effective Sample	173			47
IPO SMEs	36	100	13	36
Total	236	100	122	61

4.3 Demographic characteristics

Basic data was collected to identify characteristics about the respondents to gain an understanding of the age, experience, education, gender and position of the respondents, and the industry the firm represented and size of the firm within the industry.

4.3.1 Role of the respondent

In the case of both respondents was generally the owner or manager shown as Table 4.2 (84% in the case of the non-IPO and 61.5% in the case of the IPO, adding the accountant to this 88%, and 77%). It would be expected that these people would have a sound understanding of business practices basic to this study.

Table 4.2 Roles of respondents within each SME

Role	non-IPO SME	IPO SME
Owner Manager	29	1
Manager	30	8
Accountant	13	2
Secretary	3	1
Other/Not specified	7	1
Total Respondents	82	13

4.3.2 Gender of respondents

In terms of gender respondents were equally divided between male and female in the case of the non-IPO SME, while in the IPO SME respondents the majority were female displayed as Table 4.3.

Table 4.3 Gender of respondents

Gender	non-IPO SME	IPO SME
Male	41	4
Female	41	9
Total Respondents	82	13

4.3.3 Age of respondents

In the case of the non-IPO SME 85.5% of respondents were under 50 years of age, while this was 100% for the IPO SME. Interestingly, for the non-IPO SME 21% of respondents were under 30 years of age, compared to the IPO 7.7%. In the case of the IPO SME the majority of respondents were between 31-50 years of age (Table 4.4).

Table 4.4 Age of respondents

Age of respondents	non-IPO SME	IPO SME
< 30 years	17	1
31-40 years	27	6
41-50 years	26	6
> 50 years	12	3
Total Respondents	82	13

4.3.4 Education level of respondents

Table 4.5 indicates the majority of respondents held a bachelors or masters degree. IPO respondents were more likely to possess a Masters degree than respondents from non-IPO SMEs – 69% compared to 35%.

Table 4.5 Highest qualification of respondents

Education level	non-IPO SME	IPO SME
Primary School	0	0
High School	2	0
Diploma	2	0
Bachelors Degree	48	4
Masters Degree	29	9
Doctorate	1	0
Total Respondents	82	13

4.3.5 Industrial sector to which SME belongs

Respondents were representative of a diverse range of industry groups. Table 4.6 shows that in the case of the non-IPO SME 36.5% were manufacturers, 14.5% were wholesalers, 19.5% service and 14% retail compared to the IPOs 38.5% were manufacturers, 7.5% wholesale, and 23% service.

Table 4.6 Industrial sector of respondents

Industrial sector	non-IPO SME	IPO SME
Manufacturer	30	6
Wholesale	12	1
Retail	11	0
Service	17	3
Technology	8	0
Agricultural	1	0
Property	0	2
Construction	0	1
Import	2	0
Consulting	1	0
Total respondents	82	13

4.3.6 Length of time firm established

The data in Table 4.7 show that most of the IPO and non-IPO SMEs had been established for 7-10 years. By and large these were not new entities. Sixty-four and half percent of the non-IPO SMEs had been established for this length of time compared to 77% of IPO SMEs. Only one non-IPO SME had been established less than one year.

Table 4.7 Length of time SME established

Time established	non-IPO SME	IPO SME
< 1 Year	1	0
1-3 Years	10	1
4-6 Years	18	2
7-10 Years	53	10
> 10 Years	0	0
Total respondents	82	13

4.3.7 Form of business organisation

In IPO SMEs, all of respondents indicated that their company were organised as a listed company that is, listed on the MAI. While 86.5% of non-IPO SMEs respondents indicated that their firms were organised as companies though not listed on the MAI, 7.3% operated in sole trader, 6.1% structured in partnership form shown as Table 4.8.

Table 4.8 Form of business organisation

Form of organisation	non-IPO SME	IPO SME
Sole trader	6	0
Partnership	5	0
Company	71	0
Listed company	0	13
Other	0	0
Total respondents	82	13

4.3.8 Value of fixed

Table 4.9 indicates that Assets held by respondent firms almost 77% of IPO SMEs had invested more than 100 million baht in fixed assets in the business while almost 66% of non-IPO SMEs had invested less than 30 million baht. Three IPO SMEs had invested less than 60 million baht in fixed assets. In the case of non-IPO SMEs 17% had invested between 31 and 60 million baht with 14.5% investing over 100 million baht.

Table 4.9 Value of fixed assets held June 2006

Value of Fixed Assets (Baht)	non-IPO SME	IPO SME
< 30m	54	1
31-50m	7	1
51-60m	7	1
61-100m		
> 100m	12	10
Not reported	2	0
Total respondents	82	13

4.3.9 Number of full time employees (equivalent)

While all of the IPO SMEs employed more than 46 employees, only 39% of non- IPOs did. In general IPO SMEs are larger than the non- IPO in terms of employment. In fact 39% of non- IPOs employed fewer than 15 employees indicated as Table 4.10.

Table 4.10 Full time employees

Number of employees	non-IPO SME	IPO SME
< 15	31	
16-25	7	
26-35	4	
36-45	9	
>46	31	13
Total Respondents	82	13

4.4 Analysis of quantitative data

4.4.1 Processing of Accounting Information System

Respondents indicated in Table 4.11 that information technology was important within the accounting information systems of both the non-IPO SME and the IPO SME. All IPOs used a computerised accounting information system, though 3 SMEs indicated that there were manual elements remaining. On the other hand, while 43 of the non-IPO SMEs indicated that their accounting information systems were fully computerised, 34 still operate systems combining computerisation and manual elements within the accounting system, and 5 continue to operate a manual accounting information system.

Table 4.11 Adoption of Technology within the Accounting Information System

Accounting Information System	non-IPO SME	IPO SME
Manual	5	0
Mixed	34	3
Computerised	43	10
Total Respondents	82	13

4.4.2 Information technology within the Accounting Information System.

Respondents were asked a group of questions to identify the importance that their firms attached to the adopted of information technology within the accounting information system. The reasons put forward were to be rated on a five point scale from highly important to completely unimportant.

The descriptive results shown in Table 4.12 listed on page 67 indicate for most reasons identified both IPO and non-IPO SMEs believed that these were important.

Table 4.12 Reasons for the adoption of Information Technology within the Accounting Information System

Statements	IPO SMEs (Number of respondents)					Non-IPO SMEs (Number of respondents)				
	1 Strongly Unimportant	2 Unimportant	3 Neutral	4 Important	5 Very Important	1 Strongly Unimportant	2 Unimportant	3 Neutral	4 Important	5 Very Important
Improved ability to capture and record business operations and business events.				9	4			5	33	44
Ability to advise management and to prepare reports for decision making			2	8	3			18	34	30
To assist in providing timely information to support an effective performance evaluation system				7	6		1	15	39	27
Enhances the accuracy and reliability with which data is processed			1	9	3		1	13	37	31
Better information (timely, relevant and reliable) to management to assist in reducing costs and improving productivity.				11	2			10	45	27
Better information (timely, relevant and reliable) to management to assist in identifying and minimising risks faced by company.		1	1	8	3		1	15	42	24
Technology has become a effective way to facilitate financial management			2	9	2			11	34	37
Technological approaches offer the ability to increase the value and effectiveness of business operations			2	8	3			10	36	36
The ability to utilise technology has been facilitated by access to low cost of microcomputers and user-friendly accounting software		2	1	6	4	1		13	29	39
Technology has assisted in providing the type of financial management and financial reporting required to satisfy information needs for decision making.			1	8	4			14	35	33

Of the reasons suggested to be important in the adoption of information technology within the accounting information system both IPO and non-IPO SMEs indicated that they were important to very important. In Table 4.12 listed on page 67, 100% of IPO respondents indicated that information technology improved the ability to capture and record business operations and events, to assist in providing timely information to support an effective performance evaluation system, to provide more timely, relevant and reliable information to management to assist in reducing cost and raising productivity. This compared to non-IPO respondents identifying each of the reasons to be important in 93.9%, 80.5% and 87.6% of cases respectively. In the case of non-IPO respondents these reasons were considered to be unimportant by one respondent in each case while a number of respondents in each case did not consider the reasons either important or not important.

Other reasons considered to be important by 80% or more respondents was the ability to provide financial and management reporting to better provide better information to advise management and to prepare reports for decision making, enhancement to the accuracy and reliability of processing data, offering more timely, relevant and reliable information to management in seeking to identify and minimise risk, seen as a means to better facilitate financial management and to assist in increasing the value and effectiveness of business operations. In most instances the IPO SMEs indicated that the reasons were marginally more important than non-IPO SMEs. Though, the ability of technology to assist in facilitating financial management, in offering an increased ability to increase the value and effectiveness of business operations, and offering access to lower cost microprocessors and user friendly accounting software were marginally more important to the non-IPO SME. Interestingly the last reason here was considered completely unimportant by one non-IPO respondent.

In the case of the IPO SMEs one respondent considered the provision of more timely, relevant and reliable in the management of risk to be unimportant while two considered access to low cost microcomputers and user friendly accounting software not to be important.

4.4.3 Roles of information technology played within the Accounting Information System

Respondents were then asked what roles they believed information technology should play within the accounting information system. Respondents were asked, on a 5 point scale, to indicate for each possible role whether they considered the role completely unimportant through to highly important.

Roles expected of information technology within the accounting information system include financial information processing, financial report preparation, management accounting reports and financial information utility. Under each of these headings respondents were asked to indicate the importance that they attached to each.

The data shown in Table 4.13 listed on page 71 indicates both IPO and non-IPO SMEs stated that the processing of financial information was important. Interestingly, under the two roles identified, processing transactions and allowing interactive processing of accounting information 69.3% of IPO SMEs rated processing to be important to very important compared to 79.3% of non-IPO SMEs, while for interactive processing 89.2% of IPO SMEs identified this to be important compared to 65.8% of non-IPO SMEs. This suggests that the application of technology within the IPO SME is likely to be more advanced.

In terms of financial report preparation the majority of respondents in each group indicated that the three roles identified were important. Eighty percent of non-IPO SME respondents indicated that the preparation of financial reports was important to very important compared to 77% of IPO SME respondents. Information technology was also considered to be important to facilitate the editing of reports, 74.5% of non-IPO respondents and 69% of IPO respondents identified this role to be important to very important. Interestingly, under the third role identified under this group IPO SME respondents identified this role to be more important than non IPO respondents. The role related to the facilitation of the preparation of up to date financial and analytical reports. Ninety-two percent of IPO respondents identified this role to be important to very important compared to 80.5% of non-IPO respondents.

The third roles identified related to management accounting reports. Non-IPO respondents regarded both roles to be marginally more important than the IPO respondents. In the preparation of management reports 80.5% of non- IPO respondents identified this role of information technology to be important to very important compared to 76.9% of IPO respondents. While 81.7% of non- IPO respondents regarded the role of information technology in assisting in the presentation of reports in a format suited to management analytical requirements to be important to very important compared to 76.9% of IPO respondents.

The final group of roles of information technology considered related to the utility of financial information. IPO respondents considered the provision of instant real time information to be important to very important, 84.6% of IPO respondents compared to 71.9% of non- IPO respondents. Both IPO and non-IPO respondents indicated that a role in facilitating the inquiry or search process to be important to very important, 84.6% and 84.2% respectively. The final role considered was the role of information technology in facilitating the integration of financial information with other areas of operations within the business. IPO respondents indicated that this role was important to very important marginally more so than non-IPO respondents, 84.6% and 80.5% of respondents respectively.

Table 4.13 Roles played by Information Technology played in the Accounting Information System in IPOs and non- IPO SMEs

Statements	IPO SMEs (Number of respondents)					Non-IPO SMEs (Number of respondents)				
	1 Strongly Unimportant	2 Unimportant	3 Neutral	4 Important	5 Very Important	1 Strongly Unimportant	2 Unimportant	3 Neutral	4 Important	5 Very Important
1. Financial Information Processing										
To process transactions			4	6	3	2	4	11	39	26
To allow interactive processing	1		3	7	2	2	5	21	31	23
2. Financial Report Preparation										
To prepare financial reports			3	7	3	1	1	14	33	33
To facilitate the editing of reports			4	9		1	2	18	40	21
To facilitate the preparation of up-to-date financial and analytical reports			1	11	1		3	11	37	31
3. Management Accounting Reports										
To prepare management reports		1	2	8	2	2	2	12	44	22
To present reports in a format suited to management analytical requirements			3	8	2		2	13	43	24
4. Financial Information Utility										
To provide instant real time information	1		1	7	4	2	2	19	33	26
To facilitate an inquiry/search process	1		1	9	2	1	3	9	39	30
To facilitate integration with other areas of operation of the business	1		1	9	2	2	1	13	36	30

4.4.4 Reasons information technology is not adopted within the AIS of the IPO and non- IPO SMEs

In looking at reasons for not adopting technology within the accounting information system the IPO SMEs all responded indicating that none of the reasons were considered. Since all IPO SMEs had indicated that they used information technology and operated computerised accounting information systems (76.9% indicated their systems were fully computerised, and 23.1% indicated that their systems were composed of both manual and computerised elements). While a significant percentage (41.46%) of the non-IPO SMEs do operate computerised or mixed systems a small number still retained the manual system (Table 4.14 listed on page 73).

Table 4.14 Reasons Information Technology is not adopted within the AIS of the IPO and non- IPO SMEs

Statements	IPO SMEs (Number of respondents)					Non-IPO SMEs (Number of respondents)				
	1 Strongly Unimportant	2 Unimportant	3 Not Considered	4 Important	5 Very Important	1 Strongly Unimportant	2 Unimportant	3 Not Considered	4 Important	5 Very Important
Senior management's attitude to information technology			None Considered					81		1
Senior management's limited accounting knowledge								81		1
Senior management's current information systems knowledge						1		79	2	
Senior management's innovativeness								79	3	
Lack of financial resources to invest in Technology								80	1	1
Lack of skilled IT personnel to facilitate IT adoption								79	2	1
Lack of resources to employ a suitable IT person							2	77	2	1
Available time to implement an IT								78	3	1
Company culture to IT								77	3	2
Company location to use IT								79	2	1
IT is not suited to the nature of the business							1	77	2	2
Company size is not suited to use of IT							1	77	2	2
The quality of information to be generated							1	78	3	
Concerns with data security								79	3	
Lack of information on Technology								2	80	
The application of IT is too costly								78	2	2

4.4.5 Minimising risk within the Accounting Information System

Risk management was considered to be a priority by both IPO and non-IPO SMEs, 76.9% of IPO and 74.4% of non-IPO respondents regarded this to be important to highly important. These results are shown in Table 4.15 listed on page 76. Interestingly, while risk management was a priority for the organisation each group indicated it was a lesser priority for the employee, 69% in the case of the IPO SME, and 61% in the case of the non-IPO SME. The presence of a well designed information system was important to both groups, 77% of IPO SMEs, 76.8% of non-IPO SMEs.

IPO SMEs generally regarded the possible factors identified in risk management to be more important than their counterparts, the non-IPO SME. Ninety-two percent of IPO SMEs believed the presence of back up systems to guard against the risk associated with systems failure was important compared to 86.5% of non-IPO SMEs. The IPO SME respondents also identified the importance of a policy of continuous improvement, and regular reviews of the effectiveness of internal control systems to be important in the minimisation of risk, 92% of respondents in each case compared to 86.5% and 68.3% of non-IPO SME respondents respectively. Of interest is the lesser importance attached to regular reviews of the importance of the internal control systems by the non-IPO respondents. Associated with this is the importance associated with the regular review and reconciliation of recorded transactions (92% compared to 74.4% of non-IPO SMEs).

Other issues of more importance to the IPO SME respondent than the non-IPO SME respondent include the use of performance evaluation as an internal control device (84.6% compared to 67%); providing appropriate training and guidance to employees to undertake their job responsibilities (84.6% compared to 74.4%); regular reviews and evaluations of risk management systems in place (84.6% compared to 72.5%); risk management practices should explained to staff both in terms of goals and scope (76.9% compared to 69.6%); there should be proper authorisation processes and security practices in place (77% compared to 70.7%); the risk management system should be reviewed at regular intervals (84.7% compared to 63.4%); to establish the organisation within the firm to investigate and assess risk, and control the system from within (83.6% compared to 58.5%); the presence of clearly established policies and procedures to identify risk management practices (76.9% compared to 69.5%);

availability of experts to train staff and/or responsible persons (69.3% compared to 59.3%); attention to emergent risk management technologies (61.5% compared to 52.5%); the presence of an enterprise risk management framework (69.2% compared to 43.9%).

There were a number of risk related issues that were considered more important by the non-IPO SMEs as compared to the IPO SME. These issues included the ability to separate duties (73.2% compared to 30.8%); to provide a clear/transparent policy on risk management in areas such as technology and debt (74.4% compared to 69.2%); to have clear authority linked to risk management (65.9% compared to 61.5%); to seek to transfer high risk concerns to other parties (50% compared to 38.5%); to seek harmony and co-operation amongst executives (70.8% compared to 69.2%); management have designed and made known to staff a business recovery program (70.5% compared to 61.5%)

Table 4.15 Important factors regard to minimize risk arising from your Accounting Information System in IPOs SMEs

Statements	IPO SMEs (Number of respondents)					Non-IPO SMEs (Number of respondents)				
	1 Strongly Unimportant	2 Unimportant	3 Not Considered	4 Important	5 Very Important	1 Strongly Unimportant	2 Unimportant	3 Not Considered	4 Important	5 Very Important
Risk management is a priority in your organisation		1	2	7	3	2	6	13	42	19
Risk management is a priority for each of your employees		1	3	8	1	2	7	23	41	9
An Enterprise Risk Management framework is in place in your organisation		2	2	8	1	5	8	33	29	7
Using staff performance evaluation is a internal control system	1		1	8	3	3	6	18	41	14
The scope and goals of the firm's approach to risk management activities are clearly explained to staff		1	2	6	4	1	5	19	44	13
Employees receive appropriate training and guidance to carry out their job responsibilities			2	8	3	2	3	16	41	20
Proper authorization processes and security practices are in place		1	2	4	6	3	5	16	38	20
A review and reconciliation of recorded transactions are routinely performed		1	3	9		3	3	15	44	17
The management team have designed and raised organizational awareness to a business recovery plan		1	4	7	1	3	5	16	47	11
Back-up systems are in place in the event of a systems failure			1	7	5	1	2	8	33	38
A regular review and evaluation of risk management practices is in place			2	7	4	2	5	23	39	13
A policy of continuous improvement practices is in place			1	9	3	1	5	15	39	22
Wherever practical separation of duties occurs				9	4	1	6	15	40	20
Review the effectiveness of the risk management system at regular intervals			2	6	5	1	8	21	41	11
Clearly established company policies and procedures to identify risk management practices			3	8	2	2	6	17	46	11
Regular review of the effectiveness of the internal control system			1	8	4	4	3	19	44	12
Well designed Information system is good in terms of examined Audit		1	2	6	4	3	2	15	40	23
A clear and absolute authority for risk management.		1	4	7	1	2	3	22	40	14
Clear/transparent risk management policy on technology, debt etc.		1	3	8	1	2	4	15	44	17
Experts and training team for staffs or responsible persons	1	3	3	6		4	5	24	37	12
Devices/ equipment in assisting and providing convenience for an emergent risk management	1	1	3	6	2	3	8	28	29	14
Well cooperated / harmonious agreement among each executive in organization		3	1	8	1	2	6	16	44	14
To transfer a drastic risk which is beyond the organization's ability to invest and prevent to other organization		3	5	2	3	5	8	28	33	8
To have inside organization for investigating and assessing the risk and to have inside controlled system		1	1	2	9	4	8	22	33	15

4.4.6 Information technology in the Accounting Information System supporting the provision of the information for financial decision making

This group of questions sought to identify how important respondents perceived a number of factors in assessing the efficiency of the accounting information systems within their organisations in providing the information required for financial decision making. This also reflects on the types of information that need to be available. In the results it is interesting the differences between the views of the IPO and non-IPO SMEs.

The IPO SME respondents perceived certain factors to efficiency to be more important than non-IPO respondents in the following matters. Table 4.16 listed on page 78 shows that the major importance to the IPO respondents were the availability of timely information (100% as compared to 84% of non-IPO respondents), the ability to assess profit and profitability (92.3% compared to 87.8%) and the ability to enhance the preparation of reports for use in decision making (92.3% compared to 89.1%). Other information regarded as more important by the IPO respondents included the ability to effectively cost product decisions (84.6% compared to 79.2%), the ability to present information in a manner that enhances understanding (84.6% compared to 78.1%), information presented to have both credibility and be transparent (84.6% compared to 81.7%), the ability to assess staffing costs (76.9% compared to 71.9%), an ability to support the integration of business strategy and information sources (76.9% compared to 68.3%), to assess the return on assets (76.9% compared to 69.5%).

On the other hand, in a number of situations the non-IPO respondent perceived certain factors to efficiency to be more important than IPO respondents. The ability to assess growth in sales and the ability to assess the overall firm financial performance were identified to be marginally more important by the non-IPO respondents (85.4% compared to 84.6%, and 87.8% compared to 84.6% respectively). Interestingly, the non-IPO respondents considered the presentation of information in a way that improved conciseness and clarity to be more important (74.7% compared to 69.2%). Non-IPO respondents also considered, what could be coined managerial accounting financial decisions, information to assess the quality of products or services and information to make product choice/product selection decisions to be more important (62.2% compared to 53.9%, and 58.5% compared to 30.8% respectively).

Table 4.16 Efficiency of the Accounting Information System in providing information for financial decision making

Statements	IPO SMEs (Number of respondents)					Non-IPO SMEs (Number of respondents)				
	1 Strongly Unimportant	2 Unimportant	3 Not Considered	4 Important	5 Very Important	1 Strongly Unimportant	2 Unimportant	3 Not Considered	4 Important	5 Very Important
To assess profit and profitability			1	7	5		1	9	37	35
To assess the quality of products or services	1	1	4	6	1	4	4	23	33	18
To assess staffing costs	1	1	2	8	1	1	3	19	43	16
To make various product choice/product mix selections		1	7	4	1	2	2	30	31	17
The costing of product cost decisions		1	1	8	3		7	10	48	17
To support the integration of business strategy and information sources		1	2	9	1		4	22	43	13
To assess Return on Assets		1	2	7	3		2	23	37	20
To assess growth in sales			2	8	3			12	44	26
To assess overall firm financial performance			2	8	3		1	9	46	26
To present information in a way which improves understanding of information generated.			2	9	2		1	17	51	13
To present information in a way which improves conciseness and clarity			4	7	2	1	2	18	45	16
To offer credibility and transparency of information generated.			2	9	2	1		14	47	20
To provide timely information				11	2	1	1	11	43	26
To enhance the preparation of reports for use in decision making			1	10	2	1	1	7	44	29

4.4.7 Information technology in the Accounting Information System supporting the provision of the information for financial decision making compared to competitors

In IPOs SMEs respondents, the results shown in Table 4.17 listed on page 80 show that 76.9% of them indicated that “to assess profit and profitability” was the best efficient performance and 23.1% of them also agreed that the same issues was extremely efficient performance of AIS when is compared to their competitors. The second efficient was “to provide timely information”, “to support the integration of business strategy and information sources”, and “to assess Return on Assets” were scored about 69.2% in the responses which were given to this item and 30.8% was indicated by the respondents.

The results also indicate that 38.5% of these respondents believed that “to offer credibility and transparency of information generated” was highly important to the efficiency of performance and 30.8% of respondents believed that “To assess growth in sales”, “To assess overall firm financial performance”, “To present information in a way which improves understanding of information generated”, “To present information in a way which improves conciseness and clarity”, “To provide timely information”, and “To enhance the preparation of reports for use in decision making” was highly important to the efficiency of performance of the AIS when compared to competitors. The results of the importance of selected statements to the efficiency of AIS performance in financial decision making compared to competitors in IPOs SMEs are shown in Table 4.17 listed on page 80.

Table 4.17 Importance of reasons in assessing the efficiency of performance of the Accounting Information system in financial decision making compared to competitors between IPOs and non-IPOs SMEs

Statements	IPO SMEs (Number of respondents)					Non-IPO SMEs (Number of respondents)				
	1 Strongly Unimportant	2 Unimportant	3 Not Considered	4 Important	5 Very Important	1 Strongly Unimportant	2 Unimportant	3 Not Considered	4 Important	5 Very Important
To assess profit and profitability				10	3	1	4	11	45	21
To assess the quality of products or services		2	3	5	3	2	9	18	42	11
To assess staffing costs		1	3	7	2	1	8	22	37	15
To make various product choice/product mix selections		2	4	5	2	1	7	35	29	10
The costing of product cost decisions		1	1	8	3		6	12	47	16
To support the integration of business strategy and information sources			2	9	2	2	5	22	41	12
To assess Return on Assets		1	1	9	2	2	3	20	41	16
To assess growth in sales		1	2	6	4	1	3	13	45	20
To assess overall firm financial performance		1	1	7	4		5	14	40	23
To present information in a way which improves understanding of information generated.		1	1	7	4	1	5	18	47	11
To present information in a way which improves conciseness and clarity		1	2	6	4	1	6	16	44	15
To offer credibility and transparency of information generated.			2	6	5	1	4	17	45	15
To provide timely information				9	4		5	11	44	22
To enhance the preparation of reports for use in decision making				9	4		4	10	43	25

In non-IPOs SMEs respondents, the results show that 57.3% of non-IPOs SMEs indicated that “To present information in a way which improves understanding of information generated” and “The costing of product cost decisions” were highly important to the efficiency of AIS performance in the firm. Also, 54.9% of them agreed that “To assess profit and profitability”, “To assess growth in sales”, and “To offer credibility and transparency of information generated” were the second important reasons related to the efficiency of AIS performance in their business. Moreover, less than 50% of respondents agreed that “To assess staffing costs”, “To make various product choice/product mix selections”, and “To assess overall firm financial performance” were of least importance to the efficiency of AIS performance.

Further, the results shown in Table 4.17 listed on page 80 present that 30.5% of respondents concurred that “To enhance the preparation of reports for use in decision making” was very important to the efficient AIS performance, 28.0% of them also agreed that “To assess overall firm financial performance” was the second important reason to the efficient performance of the AIS when compared to the SMEs competitors, 26.8% of respondents believed that “To provide timely information” was the third important reason to the efficient performance of the AIS when is compared to competitors, 25.6% of respondents believed that “To assess profit and profitability” was the fourth important reason for the efficient performance of the AIS when compared to competitors, 24.4% of the respondents agreed that “To assess growth in sales” was the fifth important reason for the efficient performance of the AIS as compared to competitors.

In terms of “To make various product choice/product mix selections”, 42.7% of respondents do not consider this issue in considering the important to the efficiency of AIS performance with addressing competitors.

The results of the comparison of the importance of reasons relating to the efficiency of AIS performance in financial decision making as compared to competitors between IPOs and non-IPOs SMEs were shown in Table 4.18 listed on page 82. Results indicate that 100% of IPOs SMEs agreed that “To assess profit and profitability”, “To provide timely information”, and “To enhance the preparation of reports for use in decision making” were important to the efficiency of AIS performance in financial decision making as compared to competitors. And, 84.6% of the respondents indicated that “The

costing of product cost decisions”, “To assess overall firm financial performance”, “To present information in a way which improves understanding of information generated”, and “To offer credibility and transparency of information generated” were important to the efficient performance of the AIS.

In non-IPO SMEs, the results show that respondents had the same agreement as IPOs SMEs respondents that 82.9% and 80.5% of them agreed that “To enhance the preparation of reports for use in decision making”, “To assess profit and profitability”, and “To provide timely information” were important to the efficient performance of the AIS in financial decision making compared to competitors.

Table 4.18 A comparison of the importance of reasons in assessing the efficiency of performance of the Accounting Information system in financial decision making compared to competitors between IPOs and non-IPOs SMEs

	IPO-SMEs (% of respondents) Importance	non-IPO SMES (% of respondents) Importance
To assess profit and profitability	<u>100</u>	80.5
To assess the quality of products or services	61.6	<u>64.6</u>
To assess staffing costs	<u>69.2</u>	62.4
To make various product choice/product mix selections	<u>53.9</u>	47.6
The costing of product cost decisions	<u>84.6</u>	76.8
To support the integration of business strategy and information sources	<u>74.6</u>	64.6
To assess Return on Assets	<u>74.6</u>	69.5
To assess growth in sales	<u>77.0</u>	69.3
To assess overall firm financial performance	<u>84.6</u>	76.8
To present information in a way which improves understanding of information generated.	<u>84.6</u>	70.7
To present information in a way which improves conciseness and clarity	<u>77.0</u>	72.0
To offer credibility and transparency of information generated.	<u>84.7</u>	73.2
To provide timely information	<u>100</u>	80.5
To enhance the preparation of reports for use in decision making	<u>100</u>	82.9

4.5 Summary

This chapter presented the statically analysis that was conducted on the survey data of this research. Survey respondents' geographical information was provided using descriptive analysis.

In the next chapter, the results from tested the five hypotheses which were developed in Chapter 3, also the research results of research questions will be reported.

Chapter 5

Research questions and hypotheses testing

5.1 Introduction

In this chapter the descriptive data is analysed in the context of the research questions and hypotheses posed. This analysis is supported by interview data collected.

5.2 The research questions

This study considered the population of IPO and a sample of non-IPO SMEs in Thailand. The intention was to fill a gap in the literature by considering the role of technology, internal control and risk management with particular reference to the accounting information system. The study considers both the IPO and non-IPO SMEs, and highlights differences found between them. The major research question posed in this study is:

What is the role of technology, internal control and risk management within the accounting information systems of IPO and non-IPO SMEs in Thailand?

This major research question was investigated in terms of the four specific research questions below:

- 1 Do SMEs utilize technology within their accounting information systems in Thailand?
- 2 What internal control procedures are adopted within the accounting information system by Thai SMEs?
- 3 What risk management practices are adopted by Thai SMEs to safeguard the accounting information system?
- 4 Is the information generated within the accounting information system able to meet the decision making requirements of the SME?

5.2.1. Research question 1: Do SMEs utilize technology within their accounting information systems in Thailand?

The intention of this question was to establish whether, and to what degree technology was adopted by Thai SMEs within the accounting information system. In addressing this question three hypotheses were posed:

H1: SMEs within Thailand use information technology within their accounting information systems.

H2: IPO SMEs use information technology within the accounting information system more frequently than non-IPO SMEs in Thailand.

H3: IPO SMEs consider information technology within the accounting information system to be more important than non-IPO SMEs in Thailand.

The results indicated that both IPO and non-IPO SMEs adopted computerised accounting information systems and operated systems that often combined computerisation and manual elements within the accounting system (Table 5.1). However, no IPO SME adopted a manual only system compared to 5 non-IPO SMEs that did. Almost 50% of non-IPO SMEs either adopted a mixed or manual system compared to 77% of IPO SMEs that adopted fully computerised systems.

Table 5.1 Adoption of technology within the Accounting Information System

Accounting Information System	non-IPO SME	IPO SME
Manual	5	0
Mixed	34	3
Computerised	43	10
Total Respondents	82	13

The quantitative analysis was supported by the interviews undertaken. Interviewees were asked about the method adopted by their firm to process accounting information and the reasons they had for adopting this method.

One interviewee commented:

'For accounting information management, before being registered on the stock-market (MAI) software called 'Express' (DOS based operating system) had been used by accountants. Now software called 'Staract' has been adopted (Windows based)'. Staract was adopted because 'it is a standalone system adopting Windows, is easy to use and manipulate and resolves the weaker points of Express software, like data analysis and export to an excel spreadsheet. Express did not support a quotation and purchase order system and could not integrate data effectively'. (Interviewee 1, IPO SME).

Another, within an IPO SME, noted that:

'The company uses the computer to manage the accounting information system. Accounting software called Express, an application software costing 20,000 baht (converted \$AUD 667 at October 2006) was adopted. The DOS version was used prior to entry onto the MAI, the Windows version was adopted after'.

The interviewee indicated that this software was adopted because the application was designed by a Thai programmer, specifically for accounting work, it was not costly, was easy to use and implement.

The non-IPO SMEs indicated that while they used computer based systems often it was a mixed system that was adopted:

'We integrate the performance of the computer with manual purchase orders, bookkeeping and storage of accounting information as it is a family business. We normally use the computer to prepare financial reports for taxation purposes using Excel rather than purchasing an accounting program'. The interviewee also indicated that computers were used for more complicated costing required in an engineering business specialising in 'production,

house structure and interior design' to ensure competitive bids were made for projects (Interviewee 1, non-IPO SME).

On the other hand the second non-IPO SME respondent interviewed indicated that they adopted Express software:

'Accounting management was by hand with the assistance of an IBM computer between 1990-1996. Then, the computer was applied adopting accounting software called 'Express' for managing the accounting information system. The firm has 28 computer stations with one server. The SME purchased three accounting programs including an inventory, and a payroll software application'.

The importance of the accounting information system was recognized: *'to solve the problems of data storing, data fraud, security to limit access, and the operation is less affected when staff resign'* as the information is in electronic form (Interviewee 2, non-IPO SME).

Interviewees were also asked why particular software was chosen, what role that information technology played within the accounting information system and whether it affected the firm's ability to make financial decisions. The first IPO SME Interviewee commented that the accounting software was:

'Easy to use, the application of technology enabled the accounting function to run efficiently with real time processing reducing repetition, allowing searching and reducing financial risk by allowing the accuracy of information to be checked'.

The second IPO SME Interviewee commented that: *'our executives realized the significance that technology could play and the important role of technology investment. With the AIS system our business runs smoothly and is able to provide accurate data for decision making as the working system is real time'*.

In terms of the role in providing information for decision making IPO SME Interviewee 1 commented on the adoption of technology in assisting the firm to meet financial reporting requirements. He commented that the adoption of technology has:

'Enabled the firm to release financial budgets promptly and examine the capital and interest commitments accurately. This has resulted in the effective assessment of business return on assets accurately and reliably. Moreover, the IT staff are developing the system to allow the calculation of capital needs for logistic transportation and goods in the factory both in export and import (shipping-in and out) in our efforts to reduce capital needs and increase our capacity to produce goods effectively'.

IPO SME Interviewee 2 also noted the benefits to the firm in assisting the reporting process:

'We have monthly financial reports to executives, reports for financial decision making and administrative management. We also have a three monthly financial report to the MAI Stock Market Committee. Since we have 1000 list of products/goods in each month, the computer using Staract, a software package, which has real time data assessment, is able to play a vital role in this regard as it can produce financial reports on demand'.

Another non-IPO SME interviewee (1) commented:

'We use the computer to prepare accounting and financial data for decision making, in preparing competitive bids, to satisfy customers, and to analyze cost of goods. Technology helps the company to increase the accuracy and reliability of accounting and financial data resulting in increased creditability to both the financial institution and customers'.

They do not have plans to grow the accounting function *'What we have now is quite sufficient and satisfactory, and besides, we find no necessity to purchase such expensive software'.* Otherwise we need to provide availability of suitable training for staff. (non-IPO Interviewee 1).

Table 5.2 Reasons identified to be Important in the adoption of Information Technology within the AIS

Statements	In IPO SMEs (Number of respondents)					One-Sample T-test (Value=3)		In non-IPO SMEs (Number of respondents)					One-Sample T-test (Value=3)	
	Strongly Unimportant	Unimportant	Neutral	Important	Very Important	t	Sig. (2tailed)	Strongly Unimportant	Unimportant	Neutral	Important	Very Important	t	Sig. (2tailed)
Improved ability to capture and record business operations and business events.				9	4	9.815	0.000			5	33	44	14.249	0.000
Ability to advise management and to prepare reports for decision making			2	8	3	3.825	0.002			18	34	30	10.183	0.000
To assist in providing timely information to support an effective performance evaluation system				7	6	10.156	0.000		1	15	39	27	10.018	0.000
Enhances the accuracy and reliability with which data is processed			1	9	3	7.500	0.000		1	13	37	31	10.668	0.000
Better information (timely, relevant and reliable) to management to assist in reducing costs and improving productivity.				11	2	11.078	0.000			10	45	27	11.242	0.000
Better information (timely, relevant and reliable) to management to assist in identifying and minimising risks faced by company.		1	1	8	3	4.416	0.001		1	15	42	24	9.778	0.000
Technology has become a effective way to facilitate financial management			2	9	2	6.262	0.000			11	34	37	12.041	0.000
Technological approaches offer the ability to increase the value and effectiveness of business operations			2	8	3	6.062	0.000			10	36	36	12.135	0.000
The ability to utilise technology has been facilitated by access to low cost of microcomputers and user-friendly accounting software		2	1	6	4	3.207	0.008	1		13	29	39	11.076	0.000
Technology has assisted in allowing the careful attention to financial management and financial reporting required to meet information needs.			1	8	4	7.407	0.000			14	35	33	11.095	0.000

In reviewing the three hypotheses posed in response to research question one each is supported by both the quantitative and qualitative results.

H1: SMEs within Thailand use information technology within their accounting information systems.

Descriptive results indicated that both IPO and non-IPO SMEs adopted information technology within their accounting information systems (Table 5.2 listed on page 90). Of the IPO SMEs surveyed 77% had systems that were totally computerised, while 3% operated a mixed system using some manual components. While 6% of non-IPO SMEs adopted a manual system 94% either adopted a mixed (42%) or fully computerised system (52%). A review of the responses to the statements posed in Table 5.2 listed on page 90 for both IPO and non-IPO SMEs all reflects means >3 and t-tests for both groups were significant. Hypothesis 1 is therefore supported. Thai SMEs utilise technology within their accounting information systems. The quantitative results were strongly supported by the interview data.

The second hypothesised that the IPO SMEs would be more likely to use information technology than their non-IPO counterparts.

H2: IPO SMEs are more likely to use information technology within the accounting information system than non-IPO SMEs in Thailand.

This hypothesis is supported. Table 5.1 listed on page 85 indicates that 77% of IPO SMEs adopt fully computerised systems as compared to 52% of non-IPO SMEs. In addition 6% of non-IPO SMEs adopts a manual system while no IPO SME did.

H3: IPO SMEs are more likely to consider information technology within the accounting information system to be important than the non-IPO SME in Thailand.

This hypothesis is also supported though both groups consider the application of technology to be important IPO SMEs are more likely to have implemented a fully computerised system and to rely little, if at all, on manual approaches.

5.2.2. Research question 2: What internal control procedures are adopted within the accounting information system by Thai SMEs?

The second question investigated considered the adoption of internal control procedures within the accounting information system. Two hypotheses were posed. The first hypotheses sought to assess whether SMEs in Thailand did have developed internal control systems, and the second to identify whether there were differences between the IPO and non-IPO SME.

H4: SMEs in Thailand have developed systems of internal control.

H5: IPO SMEs have developed internal controls while non-IPO SMEs have not.

Table 5.3 listed on page 96 identifies the internal control procedures identified by respondents in both the IPO and non-IPO SME. IPO SMEs indicated that it was important for there to be regular reviews of the effectiveness of internal control systems in the firm's efforts to minimise risk (92%), while the non-IPO SMEs indicated lesser importance (71%) of more regular reviews. This may not be unexpected as in the case of the non-IPO SME the owner will normally be involved in everyday management. This is also reflected in the importance associated with the importance of internal audits to assess risk and the effectiveness of the internal control systems. Only 59% of non-IPO SMEs identified this to be important compared to 85% of IPO SMEs. Both IPO and non-IPO SMEs attributed the same level of importance to the presence of a well designed information system to allow quality assessment of performance (77% of respondents in each group).

As one IPO SME interviewee commented:

'The company employs both internal and external auditors to minimise risk activity. We also explain the goals of and risk management practices to all staff and have a work assessment system for staff. Staff are sent for training in internal control systems (COSO) at the stock market (MAI).'

The second IPO SME interviewee noted:

'According to regulations in the stock market, a listed firm is required to have an internal Auditor. We hire an internal auditor ... using internal controls in accordance with COSO. We assign responsible office work to four accountants and confine their right to access data to the areas for which they are responsible. Only the accounting director can access all data. It is most confidential'.

The clear explanation of the scope and goals of the firms risk management procedures to all staff was identified to be important by 77% of IPO SMEs and 70% of non-IPO SMEs. Interestingly there was a difference in the importance the two groups associated with the link between internal control systems and staff performance evaluation. Eighty-five percent of IPO SMEs indicated that this was important while 67% of non-IPO SMEs. Both groups indicated that staff required appropriate training in order to undertake their job responsibilities (85% of IPO SMEs, compared to 74% of non-IPO firms). In terms of business recovery and backup systems there were differences between the two groups. The importance to both groups of backup systems in the event of systems failure was very important. Ninety-two percent of IPO SMEs and 87% of non-IPO SMEs indicated the presence of adequate backup procedures were important. However, in terms of business recovery plans only 62% of IPO SMEs identified this to be important as compared to 71% of non-IPO SMEs though 4 of the IPO SMEs responded neutrally to the question. One IPO interviewee noted:

'Data backup is a must for all staff whereas accounting and financial data backup is done by IT staff. Besides, the right to access data by staff without authority is prohibited. Only accountants, the financial manager, and executives are authorised to access the data to prevent financial fraud'.

The other interviewee commented:

'The most essential data are kept in the server by dividing data to each responsible staff. Staffs have to keep personal data in their own data files to prevent or protect data from virus with data update

Antivirus and data fraud. Besides, we have weekly backup to prevent data failure by IT staff. This means we have 4 backups a month. Since our firm is a service organization, we are not worried about data fraud as each data has its own features’.

In terms of the more practical aspects of ensuring adequate authorisation and security practices, and in review and reconciliation of transactions both IPO and non-IPO SMEs indicated these to be important (77% and 69% for IPO SMEs, and 71% and 74% of non-IPO SMEs respectively). As one of the non-IPO interviewees commented:

‘Adopting “Express”, an accounting package, helps us to undertake regular data checking. Besides, we also have a system that prevents customers’ data fraud by limiting access to different drives, except by authority. This also helps us to avoid virus infection in computers as well’.

T-tests were undertaken to assess the significance of each of the questions. The results show that the value of two-tail significance of both IPO and non-IPO SMEs are less than 0.05 ($p < .05$), thereby indicating that each indicated a significant positive response. These results are reported in Table 5.3 listed on page 96. They show that both IPO and non-IPO SMEs consider staff performance evaluation to be a part of internal control ($p = .008$, $p = .000$ respectively), the management team of both IPO and non-IPO SMEs designed and raised organizational awareness to a business recovery plan as a part of internal control ($p = .014$, $p = .000$ respectively), reviewing and reconciliation of recorded transactions are routinely performed in both group ($p = .000$, $p = .000$ respectively), both IPO and non-IPO SMEs perform a regular review of the effectiveness of the internal control system ($p = .000$, $p = .000$ respectively), also having a well designed information system is considered to be necessary for a good (financial) assessment system for both group ($p = .002$, $p = .000$ respectively), both group regard a back-up systems as a part of internal control system in the event of a systems failure ($p = .000$, $p = .000$ respectively).

Therefore, hypothesis 4 is supported in that both IPO and non-IPO SMEs indicated that internal control systems are in place, are conveyed to staff and form a part of the active operation of the firm.

Hypothesis 5 is also supported in that the importance attributed to each of the questions was in general more important to the IPO than the non-IPO SME. The main exceptions being that the IPO SME attributed lesser importance to the importance of business recovery plans after a major breakdown and the routine review and reconciliation of business transactions.

Table 5.3 The importance of the adoption of internal control in place in the Accounting Information System

Statements	In IPO SMEs (Number of respondents)					One-Sample T-test (Value =3)		In non-IPO SMEs (Number of respondents)					One-Sample T-test (Value =3)	
	Strongly Unimportant	Unimportant	Neutral	Important	Very Important	t	Sig. (2tailed)	Strongly Unimportant	Unimportant	Neutral	Important	Very Important	t	Sig. (2tailed)
The staff performance evaluation system is part of the internal control system.	1		1	8	3	3.207	.008	3	6	18	41	14	6.525	.000
The scope and goals of the firm's approach to risk management activities are clearly explained to staff		1	2	6	4	3.950	.002	1	5	19	44	13	8.323	.000
Employees receive appropriate training and guidance to carry out their job responsibilities			2	8	3	6.062	.000	2	3	16	41	20	9.107	.000
Proper authorization processes and security practices are in place		1	2	4	6	4.215	.001	3	5	16	38	20	7.433	.000
A review and reconciliation of recorded transactions are routinely performed		1	3	9		3.411	.005	3	3	15	44	17	8.259	.000
The management team have designed and raised organizational awareness to a business recovery plan		1	4	7	1	2.889	.014	3	5	16	47	11	7.044	.000
Back-up systems are in place in the event of a systems failure			1	7	5	7.479	.000	1	2	8	33	38	13.878	.000
Regular review of the effectiveness of the internal control system	1			8	4	7.407	.000	4	3	19	44	12	6.705	.000
Having a well designed information system is necessary for a good (financial) assessment system		1	2	6	4	3.950	.002	2	2	15	40	23	9.943	.000
Internal audit function to investigate and assess risk and the effectiveness of the internal control system		1	1	2	9	5.447	.000	4	8	22	33	15	4.922	.000

The third research question explored the risk management practices adopted by SMEs in Thailand to provide protection to the information system, a major part of any information system within a firm being the accounting information system.

5.2.3. Research question 3: What risk management practices are adopted by Thai SMEs to safeguard their information systems?

In seeking a response to this question two hypotheses were posed:

The first considered SMEs in Thailand while the second sought to distinguish between the IPO and the non-IPO SME.

H6 SMEs in Thailand believe that risk management is a priority.

H7 IPO SMEs will indicate that risk management is more important within the information system than the non-IPO SMEs.

In analysing the results to the questions (Table 5.4 listed on page 101) that sought to respond to these hypotheses it is found that both IPO and non-IPO SMEs consider risk management within the information system to be important. Both IPO and non-IPO SMEs considered that risk management was a priority within the firm (77% of IPO SMEs compared to 74% of non-IPO SMEs). However, neither IPO nor non-IPO SMEs identified this being as important a priority for employees as for management (69% of IPO SMEs felt this was an important priority for employees compared to 61% for non-IPO SMEs). This importance was highlighted by one of the IPO interviewers who commented:

'Regarding operational risk the company explains to all staff the firm's goals, and risk management activity, and the roles of external and internal examiners to ensure the appropriate control for risk management of the organisation is in accordance with risk based auditing practices. In addition, staff are sent to training sessions about risk management and internal control with the MAI'.

As might be expected given the difference between the IPO and the non-IPO SME, 69% of IPO SMEs indicated that they had an enterprise resource management package in place as compared to 44% of non-IPO SMEs indicative of more sophisticated information systems.

One IPO interviewee commented:

'We manage organisational risk to all staff. We assign work for each and every section to reduce risk by utilising an enterprise resource management package.'

IPO SMEs were more likely to undertake regular reviews and evaluations of risk management practices (85% of IPO SMEs compared to 63% of non-IPO SMEs). However, this may also be a reflection of the proximity of the owner to everyday management. That is, as a business grows the manager or owner becomes more distant from day to day management and operations.

This view was supported by one non-IPO interviewee who commented:

'Actually, we don't have such risk as we have a participatory administration and management amongst the family such as regular meetings to discuss business matters. We always manage inventory using EOQ at zero level. We focus on the customer's order instead of storing goods. We consider the product capacity to prevent production risk and to complete work as promised to each customer.'

This interviewee further argued that risk was avoided as 'there is no leakage or loss of accounting data because we have the manual method and we prepare financial report once a year to submit to the Thai Revenue Department and we use Excel to assess the financial budget'.

While 77% of IPO SMEs indicated that they have clear policies and procedures in place in regard to risk management, compared to 70% of non-IPO SMEs, 66% of non-IPO SMEs indicated that they had clear policies on the allocation of risk management

responsibilities within the firm as compared to 61% of IPO SMEs. For example, one non-IPO interviewee commented:

'We divide the office into several sections that we believe are ideal for working and reducing risk. The framework adopted to manage risk is through the ERM (Enterprise Risk Management System) and all firm staffs are given an explanation of the goals and risk managing activities of the firm. We have a data substitute (backup) system in place in case of a failure within the main data system by backing our data up on a separate hard disk and sending a copy to the executive's house. Moreover, we limit the authority of staff to access AIS data files. This is determined by the manager''.

Ninety-two percent of IPO SMEs indicated that they had a policy seeking to achieve continuous improvement of risk management practices in place as compared to 73% of the non-IPO SMEs. Eighty-five percent of the IPO SMEs also indicated that they had policies in place to review the effectiveness of risk management practices compared to 63% of non-IPO SMEs. It appears that the non-IPO SME is more likely to have risk policies in place in regard to specific issues as compared to the IPO SME (74% compared to 69%). However, the IPO SME is likely to have considered emergent risk management issues than the non-IPO SME (62% compared to 52%).

Sixty-nine percent of IPO SMEs ensure that staffs are provided with expert training in risk management awareness as compared to 60% of non-IPO SMEs. The non-IPO SME was marginally more likely to have a co-operative and harmonious agreement between senior executives in regard to risk management than the IPO SME (71% compared to 69%).

Significance testing was undertaken adopting t-tests reported in Table 5.4 listed on page 101. The results show that the value of two-tail significance of non-IPO SMEs are less than 0.05 ($p < .05$) and almost of statement posted in Table 5.4 of IPO SMEs are less than 0.05 ($p < .05$), so indicating that each indicated a significant positive response. They prove that both IPO and non-IPO SMEs believe that risk management is important to be a priority in organization and for staff ($p = .002$, $p = .000$ and $p = .006$, $p = .000$ respectively, a regular review and evaluation of risk management is significant to be a

priority of risk management for both group ($p=.000$, $p=.000$). Thus, it is H6 is supported.

Hypothesis 7 is also supported in that the importance attributed to each of the questions was in general more important to the IPO than the non-IPO SME. One exception was that the IPO SMEs attributed less importance to having a co-operative and harmonious agreement between senior executives in regard to risk management than the non-IPO SME. But then it is likely for many non-IPO SMEs this would not be a relevant concern given that for the majority these businesses are owner managed.

Table 5.4 The importance of the adoption of risk management in place in the Information System

Statements	In IPO SMEs (Number of respondents)					One-Sample T-test (Value=3)		In non-IPO SMEs (Number of respondents)					One-Sample T-test (Value=3)	
	Strongly Unimportant	Unimportant	Neutral	Important	Very Important	t	Sig. (2tail ed)	Strongly Unimportant	Unimportant	Neutral	Important	Very Important	t	Sig. (2tailed)
Risk management is a priority in organization		1	2	7	3	3.860	.002	2	6	13	42	19	8.185	.000
Risk management is a priority for employee		1	3	8	1	3.323	.006	2	7	23	41	9	5.968	.000
An Enterprise Resource Management System is in place in your organization		2	2	8	1	2.551	.025	5	8	33	29	7	2.825	.000
There is a regular review and evaluation of risk management			2	7	4	6.040	.000	2	5	23	39	13	6.864	.000
A policy of continuous improvement of risk management practices is in place			1	9	3	7.500	.000	1	5	15	39	22	9.329	.000
Wherever practical separation of duties takes place				9	4	9.815	.000	1	6	15	40	20	8.757	.000
The effectiveness of the risk management system is reviewed			2	6	5	6.121	.000	1	8	21	41	11	6.650	.000
Clearly established company policies and procedures are in place			3	8	2	5.196	.000	2	6	17	46	11	7.264	.000
There is a clear policy and authority allocation for risk management in the firm		4	4	7	1	2.889	.000	3	3	22	40	14	7.083	.000
There is a clear/transparent risk management policy on issues such as technology, and debt		1	3	8	1	3.323	.000	2	4	15	44	17	8.680	.000
Experts training is provided to staff and responsible persons to raise their awareness of risk management	1	1	3	3	6	0.267	.794	4	5	24	37	12	5.405	.000
Procedures are in place to assist in attending to emergent risk management issues	1	1	3	6	2	1.723	.110	3	8	28	29	14	4.707	.000
There is a co-operative and harmonious agreement among executives in the organization		3	1	8	1	2.007	.068	2	6	16	44	14	6.985	.000
To transfer a drastic risk which is beyond the organization's ability to invest and prevent to other organization		3	5	2	3	1.237	0.240	5	8	28	33	8	3.417	.001

The fourth research question sought to build a model to manage risk within the accounting information system for Thai SMEs from this study's finding.

5.2.4. Research question 4: Is the information generated within the accounting information system able to meet the decision making requirements of the SME?

In seeking a response to this question two hypotheses were posed:

H8 SMEs in Thailand believe that their decision making capability is enhanced with through the application of technology.

H9 IPO SMEs are more likely than non-IPOs SMEs in Thailand to believe that their decision making capability is enhanced with through the application of technology.

The results shown in Table 5.5 listed on page 104 indicate that the IPO SME respondents perceived certain factors to efficiency to be more important than their non-IPO counterparts. In addressing the qualitative characteristic that it is believed that information should possess to enhance decision making both groups indicated importance though the level of importance was often different. For example, IPO SME respondents attributed greater importance to the availability of timely information (100% as compared to 84% of non-IPO respondents), the ability to assess profit and profitability (92.3% compared to 87.8%), the ability to enhance the preparation of reports for use in decision making (92.3% compared to 89.1%), the ability to effectively cost product decisions (84.6% compared to 79.2%), the ability to present information in a manner that enhances understanding (84.6% compared to 78.1%), information presented to have both credibility and be transparent (84.6% compared to 81.7%), the ability to assess staffing costs (76.9% compared to 71.9%), an ability to support the integration of business strategy and information sources (76.9% compared to 68.3%), to assess the return on assets (76.9% compared to 69.5%).

On the other hand, for a number of characteristics the non-IPO respondent perceived other information to be more important than IPO respondents. The ability to assess growth in sales and the ability to assess the overall firm financial performance were identified to be marginally more important by the non-IPO respondents (85.4% compared to 84.6%, and 87.8% compared to 84.6% respectively). Interestingly, the

non-IPO respondents considered the presentation of information in a way that improved conciseness and clarity to be more important (74.7% compared to 69.2%). Non-IPO respondents also considered, what could be coined managerial accounting financial decisions, information to assess the quality of products or services and information to make product choice/product selection decisions to be more important (62.2% compared to 53.9%, and 58.5% compared to 30.8% respectively).

Table 5.5 Importance to the efficiency of the Accounting Information System in providing information for financial decision making

Statements	IPO SMEs (Number of respondents)					One-Sample T-test (Value=3)		non-IPO SMEs (Number of respondents)					One-Sample T-test (Value=3)	
	1 Strongly Unimportant	2 Unimportant	3 Not Considered	4 Important	5 Very Important	t	Sig. (2tailed)	1 Strongly Unimportant	2 Unimportant	3 Not Considered	4 Important	5 Very Important	t	Sig. (2tailed)
To assess profit and profitability			1	7	5	7.479	.000		1	9	37	35	16.458	.000
To assess the quality of products or services	1	1	4	6	1	1.328	.209	4	4	23	33	18	6.131	.000
To assess staffing costs	1	1	2	8	1	3.811	.002	1	3	19	43	16	9.446	.000
To make various product choice/product mix selections		1	7	4	1	.322	.753	2	2	30	31	17	7.188	.000
The costing of product cost decisions		1	1	8	3	4.416	.001		7	10	48	17	10.106	.000
To support the integration of business strategy and information sources		1	2	9	1	3.825	.002		4	22	43	13	9.376	.000
To assess Return on Assets		1	2	7	3	3.860	.002		2	23	37	20	10.500	.000
To assess growth in sales				2	8	6.062	.000			12	44	26	15.989	.000
To assess overall firm financial performance				2	8	6.062	.000		1	9	46	26	16.011	.000
To present information in a way which improves understanding of information generated.			2	9	2	6.245	.000		1	17	51	13	13.039	.000
To present information in a way which improves conciseness and clarity			4	7	2	4.430	.001	1	2	18	45	16	10.259	.000
To offer credibility and transparency of information generated.			2	9	2	6.245	.000	1		14	47	20	12.900	.000
To provide timely information				11	2	11.078	.000	1	1	11	43	26	13.092	.000
To enhance the preparation of reports for use in decision making			1	10	2	7.867	.000	1	1	7	44	29	14.591	.000

The results shown in Table 5.6 listed on page 108 indicate that the IPO SME believed that the information generated within the accounting information system was able to meet the financial decision making needs of the firm as compared to their competitors to be more important than non-IPO respondents in the following areas. Of major importance to the IPO respondents was the ability to assess profit and profitability (100% as compared to 80% for non-IPO respondents), the availability of timely information (100% compared to 80% for non-IPO respondents), and the ability to enhance the preparation of reports for use in decision making (100% compared to 84% for non-IPO respondents). Other information that was regarded as more important by IPO respondents included the ability to effectively cost product decisions (84.6% compared to 76.8%), an ability to support the integration of business strategy and information sources (84.6% compared to 64.6%), the ability to assess the return on assets (84.6% compared to 69.5%), the ability to assess overall firm financial performance (84.6% compared to 76.8%), the ability to present information in a manner that enhances understanding (84.6% compared to 70.7%), and information presented to have both credibility and be transparent (84.6% compared to 73.1%),

In term of the ability to assess growth in sales, non-IPO respondents indicated the following factors to be more important than IPO respondents (79.2% compared to 76.9%). Also, information to assess the quality of products or services was identified to be more important by the non-IPO respondents (64.6% compared to 61.5%). This importance was highlighted by one of the non-IPO interviewee who stated:

'We place very high reliability and trust on the capacity of the program as we are the first one which started using it and the customers also satisfy with our services. With this accounting information system management, we have achieved several advantages such as time saving, fastness of accounting and financial performances, quick data accessing without causing any effect to the related persons like customers and staff'.

While one of the IPO interviewee noted:

'The current accounting information system helps our company in administration and internet control. The financial status can be accessed on demand. Thus, we trust in the software program's performance that is around 90 % and 10 % for a slight weakness'.

In reviewing the two hypotheses posed in response to research question four each is supported by both quantitative and qualitative results.

H8 SMEs in Thailand believe that their decision making capability is enhanced with through the application of technology.

As a result of t-test value 3 shown in Table 5.5 listed on page 104, the responses to the most question were significant at the .05 level ($p < .05$). They show that capability of technology within the accounting information system provide efficiency of decision making in both IPO and non-IPO SMEs. Providing timely information is significant to be enhanced of decision making by technology ($p = .000$, $p = .000$ respectively), enhancement of the preparation of reports for use in decision making is found to be significant to an example of efficiency of the application of technology in both IPO and non-IPO SMEs ($p = .000$, $p = .000$ respectively), the ability to effectively cost product decisions is indicated to be significant of efficiency of the application of technology in both group ($p = .001$, $p = .000$ respectively). However, it is found that IPO considered information to assess the quality of products or services less important than the non-IPO ($p = .753$, $p = .000$ respectively).

The ninth hypothesised that the IPO SMEs would more likely to believe that their decision making capability is enhanced with through the application of technology.

H9 IPO SMEs are more likely than non-IPOs SMEs in Thailand to believe that their decision making capability is enhanced with through the application of technology.

This hypothesis is supported. Table 5.6 listed on page 108 indicated that IPO SMEs were more likely to believe that their decision making capability was enhanced with the application of technology. The ability to assess profit and profitability was found to be

more significant in IPO than non-IPO SMEs ($p=.000$, $p=.000$ respectively), the availability of timely information ($p=.000$, $p=.000$ respectively), and the ability to enhance the preparation of reports for use in decision making ($p=.000$, $p=.000$ respectively) as well. Nevertheless, it is found that IPO considered information to assess the quality of products or services less important than the non-IPO ($p=.068$, $p=.000$ respectively).

However, the interview results indicated that both IPO and non-IPO SMEs believed that the application of technology enhances their decision making capacity.

In sum, both IPOs and non- IPOs SMEs were satisfied and agreed that the information generated within the accounting information system able to meet their decision making required.

Table 5.6 Importance to the efficiency of performance of the Accounting Information system in financial decision making compared to competitors between IPOs and non-IPOs SMEs

Statements	IPO SMEs (Number of respondents)					One-Sample T-test (Value=3)		non-IPO SMEs (Number of respondents)					One-Sample T-test (Value=3)	
	1 Strongly Unimportant	2 Unimportant	3 Not Considered	4 Important	5 Very Important	t	Sig. (2tailed)	1 Strongly Unimportant	2 Unimportant	3 Not Considered	4 Important	5 Very Important	T	Sig. (2tailed)
To assess profit and profitability				10	3	10.119	.000	1	4	11	45	21	10.664	.000
To assess the quality of products or services		2	3	5	3	2.420	.032	2	9	18	42	11	6.004	.000
To assess staffing costs		1	3	7	2	3.333	.006	1	8	22	37	15	7.414	.000
To make various product choice/product mix selections		2	4	5	2	2.007	.068	1	7	35	29	10	5.112	.000
The costing of product cost decisions		1	1	8	3	4.416	.001		6	12	47	16	9.146	.000
To support the integration of business strategy and information sources			2	9	2	6.245	.000	2	5	22	41	12	6.970	.000
To assess Return on Assets		1	1	9	2	4.382	.001	2	3	20	41	16	8.272	.000
To assess growth in sales		1	2	6	4	3.950	.002	1	3	13	45	20	10.825	.000
To assess overall firm financial performance		1	1	7	4	4.503	.001		5	14	40	23	10.664	.000
To present information in a way which improves understanding of information generated.		1	1	7	4	4.503	.001	1	5	18	47	11	8.455	.000
To present information in a way which improves conciseness and clarity		1	2	6	4	3.950	.002	1	6	16	44	15	4.295	.000
To offer credibility and transparency of information generated.			2	6	5	6.121	.000	1	4	17	45	15	9.252	.000
To provide timely information				9	4	9.815	.000		5	11	44	22	11.332	.000
To enhance the preparation of reports for use in decision making				9	4	9.815	.000		4	10	43	25	12.459	.000

5.3 Summary

This chapter considered the results of the five research questions and tested the seven hypotheses which were developed in Chapter 3. A t-test analysis was adopted for hypotheses testing.

In the next chapter, the survey results will be discussed. The limitations of the study and recommendations for future research are stated.

Chapter 6

Discussion of results and conclusion of the study

6.1 Introduction

The previous two chapters have presented the results of the study, the latter in relation to hypotheses posed. In this chapter the results are discussed in the context of the research questions, hypotheses tested and the literature explored relating to internal control and risk management in the Accounting Information Systems in IPO and non-IPO SMEs in Thailand. Conclusions reached from the results, and the limitations of the study will be discussed as will an indication of future research opportunities.

6.2 Discussion of research questions

The results of this study are discussed in the context of each of the research questions and the associated hypotheses.

6.2.1 Research question 1 (RQ1)

Do SMEs utilize technology within their accounting information systems in Thailand?

Analysis of the quantitative results and qualitative interviews found that both IPO and non-IPO SMEs in Thailand operated accounting information systems which were either fully computerised or operated adopting a mixed system (that is, a combination of computerised and manual systems for different aspects of the accounting function). A small percentage (6%) of non-IPO SMEs operated a manual system only. Even though, there has been little research focused on the adoption of information technology within the accounting information system in small business, these results support the findings by Breen *et al* (2003). Breen *et al* (2003) conducted research in Australia on the use of

Computerized Accounting System (CAS) within small business. They found 54.9% of small business had adopted Mind Your Own Business (MYOB) as their accounting software package, followed by Quickbooks (24.6%), Cash Flow Manager and Attache (both 2.5%). In addition, Burgess (1998) found 65-76% of Australian small businesses had adopted computers and the main software application package used was accounting. Similarly the finding results of Ismail *et al* (2003) who surveyed manufacturing-based small and medium enterprises in the Northern region of Peninsular Malaysia sought to assess the status of computer-based accounting systems (CBAS). Their results showed that almost 92% of the SMEs had adopted CBAS, though 62% had adopted a mixed system (manual and computerized).

This study found that IPO SMEs, prior to listing, used accounting software called 'Express' operated under the DOS operating system. They then adopted a new application called 'Staract' which operated under the Windows operating system. The reasons for changing to a new program, they argued, that it was easy to use and manipulate and was able to resolve the weaker points of the old program. Being listed in MAI stock market, IPO SMEs management now had to meet financial reporting requirements specified by the MAI.

A number of factors entered the decision by non-IPO SMEs to use accounting software. The main decision maker was the owner/manager, and allocated the budget to invest in computing. A number of the non-IPO SMEs used the computer to prepare financial reports for taxation purposes, and rather than purchasing an accounting program used Excel. These owner/managers saw no necessity to invest in expensive accounting software or to adopt more complex applications than required for their purposes. Hall (2007) noted that the manual process model is the oldest traditional form of accounting information system and is still used by many small businesses. This was found in the current study in which a minority of Thai non-IPO SMEs operates their accounting information system utilising a manual system, and others operate a mixed system of manual and computerised systems. This finding supports the report of the National Information Technology Committee (NITC – 2003) which found that many non-IPO

SMEs in Thailand were using a manual accounting system, and others had adopted an approach combining manual and computerised accounting systems. A number of non-IPO SMEs adopted Express software because the owner had computer training, education that had taught the value of IT and accounting software and undertook a business venture that would benefit from the use of IT. Many of these firms relied on computerised accounting systems. Thong (1999) stated that the owner/manager characteristics are important to IT adoption, for example innovativeness, computer self-efficacy, level of IT knowledge, education and IT training experience. This study found that fifty percent of non-IPO SMEs in Thailand adopted computerised accounting information systems.

The results of this study indicate that the adoption of information technology within the accounting information system of SMEs is important and would be expected to enhance decision making. While the emphasis on what is important varies between the IPO and the non-IPO SME each group recognizes that technology and the accounting information systems are important. The functions associated with the AIS of collecting and storing transactions data, and processing data into information that is useful for decision making and providing adequate controls to safeguard the organization's assets are identified to be important. There is recognition that the application of technology within the accounting information system is able to increase the efficiency of internal business operation. The findings of this study confirm that the Thai government should continue to encourage and act to increase the awareness of the benefits of the adoption of information technology, in particular in the accounting information system, to encourage the efficient and effective growth of Thai SMEs.

In reviewing support for the hypotheses it was found that almost all IPO and non-IPO SMEs adopt computerisation within the accounting information system. It was found that non-IPO SMEs were more likely to adopt a system in which computerised and manual systems were adopted, and in a small number of cases retained totally manual systems. On the other hand, all IPO SMEs adopted computerised systems. These results are briefly considered in the context of each hypotheses:

Hypothesis one posed that: 'SMEs within Thailand use information technology within their accounting information system' This hypothesis was found to be supported as the majority of IPO and non-IPO SMEs were found to utilise either computerised accounting information systems or a mix of manual and computerised information system.

The second hypothesis posed: 'IPO SMEs are more likely to use information technology within the accounting information system than non-IPO SMEs in Thailand'. This hypothesis was based on the expectation that the IPO SMEs would be more likely to employ information technology than their non-IPO counterparts. This study found that 100% of IPO SMEs had adopted computerised systems, while 94% of non-IPO SMEs had adopted either mixed systems (manual and computer) or fully computerised systems within the accounting information system. Of the non-IPO SMEs almost 50% had adopted a fully computerised system. This hypothesis was supported. It is apparent that IPO SMEs are more inclined to use information technology within the accounting information system.

The final hypothesis addressing this research question posed: 'IPO SMEs are more likely to consider information technology within the accounting information system to be important than the non-IPO SME in Thailand. Both the IPO and the non-IPO SME considered that the application of information technology to be important though the importance of information technology, and the issues of importance were seen to be different. IPO SMEs were more likely to have implemented a fully computerised system and to rely little, if at all, on manual approaches. For both IPO and non-IPO SMEs the descriptive and t-test results indicated that respondents believed each statement posed that identified a characteristic that the application of information technology within the accounting information system would achieve was important, these results support the finding Schubert (2006). Schubert (2006) undertook an empirical study of ICT in Swiss SMEs. Consistent with Schubert this study found that SMEs believe that information technology can assist in the smooth operation of the firm, lowering cost of operation, ready availability of information required in decision making.

Further in this study technology was found to play an important role in transaction processing particularly when tied to interactive and real time recording. The role of technology in both financial and management report preparation were identified to be important especially linked to the ability to edit information and provide timely information, in the latter in formats suited to the needs of the analysis management wished to undertake. Finally, the ability to integrate financial information with other areas of business operations was also considered to be important. Hypothesis 3 was supported.

SMEs in Thailand do use information technology within their accounting information systems. Though a number of non-IPO SMEs do continue to utilise mixed systems, and a few remain with manual approaches. They adopt these systems largely as they better support the operation and decision making capability of the firm. These findings are consistent with other studies such as Schubert (2006), and Bresseler and Bressler (2006).

6.2.2 Research question 2 (RQ2)

What internal control procedures are adopted within the accounting information system by Thai SMEs?

The analysis undertaken and interview responses indicated that both IPO and non-IPO SMEs have internal control systems in place, that the nature of and importance of internal control is conveyed to staff and form a part of the active operation of the firm. For example, one of IPO SMEs interviewee revealed using internal controls in accordance with COSO and according to regulations in the stock market, a listed firm is required to have an internal Auditor. A study by Jelatianranat (2000) found that the lack of a strong internal control system was one of the five main areas of weaknesses found during the the financial crisis in Asia.

This study found that both the IPO and non-IPO SMEs do adopt internal control procedures. Once again the importance attached to aspects of internal control differed

between the IPO and the non-IPO. For example, the IPO SMEs indicated that regular reviews of the effectiveness of internal control systems in the firm's efforts to minimize risk were of greater importance than for non-IPO SMEs (92% of respondents compared to 71% for non-IPOs). Similarly, IPO SMEs regarded appropriate staff training and business recovery and backup systems to be more important than non-IPO SMEs yet indicated lesser importance for business recovery plans. These differences may reflect the differing size of the IPO compared to the non-IPO SME, and the nature of the ownership structure.

In the context of this research question two hypotheses were posed:

The first hypothesis posed that: 'SMEs in Thailand have developed systems of internal control'. This study found that in this was true for both the IPO and non-IPO SME, though differences were noted between the IPO and non-IPO. This hypothesis was supported.

The second hypothesis posed that 'IPO SMEs have developed systems of internal controls utilising technology while non-IPO SMEs have not'. This hypothesis was not supported in the sense that while the majority of non-IPO SMEs have systems of internal control the degree of sophistication and issues of importance differ from the IPO SME.

There has been little research focused on internal control procedures adopted in small business focusing on the internal control systems adopted, or the maintenance of effective systems of internal controls. Generally these studies have commented on the limited attention to such controls in small business. Hobbs (1985) found that a lack of efficient internal control was attributed to a number of factors including staff with limited financial and accounting skills and experience, an inability to segregate functions due to the small number of staff, easy access by staff to assets, and information procedures and weak systems of reporting, analysis, planning and control.

The results of the current study indicated that ensuring adequate authorisation and security practices, and in review and reconciliation of transactions are important to prevent data fraud. It was important for the firm to be regular reviews of the effectiveness of internal control systems in the firm's efforts to minimise risk activity.

6.2.3 Research question 3 (RQ3)

What risk management practices are adopted by Thai SMEs to safeguard the information system?

Ghoshal (1987) stated that managing risk is one of the primary objectives of firms operating internationally. In considering risk in SMEs in Thailand it was found that SMEs in Thailand were likely to have risk management practices in place. However, IPO SMEs in Thailand were more likely to have risk management policies, and to undertake regular reviews and evaluations of risk management practices than non-IPO SMEs. For example, 69 percent of IPO SMEs indicated that they had an enterprise resource management package in place to safeguard the information system in their company. In addition, being companies listed on the MAI, IPO SMEs sent staff to attend risk management sessions (such as ERM) to develop knowledge and skills in the development and maintenance of internal control systems in order to minimize risk. While Henschel (2006) found that in German SMEs the handling of risk is strongly concentrated on owner-managers and risk management is carried out in a rather rudimentary way. This view may not be supported in Thailand where 77% of IPO SMEs indicated that they have clear policies and procedures in place in regard to risk management, compared to 70% of non-IPO SMEs, 66% of non-IPO SMEs indicated that they had clear policies on the allocation of risk management responsibilities within the firm as compared to 61% of IPO SMEs. In addition to risk management practices in Thai SMEs being in place for both groups, IPO and non-IPO are also engaged in business planning. Whilst, risk management within non-IPO SMEs are seem to be reflected by owner or manager from day to day management. For instance, one of non-IPO interviewee commented that

“...we have a participatory administration and management amongst family. We have regular meeting to discuss business matters...”

Also, one non-IPO interviewee commented:

“...We have a data substitute (backup) system in place in case of a failure within the main data system by backing our data up on a separate hard disk and sending a copy to the executive’s house. Moreover, we limit the authority of staff to access AIS data files. This is determined by the manager”.

In this study it was posed that ‘SMEs in Thailand believe that risk management is a priority’ (H6). This hypothesis was found to be supported in that in excess of both IPO and non-IPO respondents in excess of 70% indicated that risk management was a priority. It was further posed that ‘IPO SMEs will indicate that risk management is more important within the information system than the non-IPO SMEs (H7)’. This hypothesis was also found to be supported.

6.2.4 Research question 4 (RQ4)

Is the information generated within the accounting information system able to meet the decision making requirements of the SME?

IPO and the non-IPO SMEs indicated that the information generated within the accounting information system is able to meet their decision making needs. In terms of contributing to better quality decision making respondents indicated that technology allows firms to better capture and record business events, improves the accuracy and reliability of data processing, and provides better data in terms of timeliness, relevance and reliability to support evaluations that, for example, may assist in reducing costs and improving productivity. Technology assisted in ensuring that better advice was passed onto management, reports for decision making were better able to be prepared,

information was available to assist in the management of risk and improved financial management and reporting was available to meet stakeholder information needs. Technology is seen as an enabler that value adds in providing a means to improve the effectiveness of business operations and to enhance the decision making process.

Further, the results show that the IPO SME respondents attributed greater importance to the availability of timely information, the ability to assess profit and profitability, the ability to enhance the preparation of reports for use in decision making, the ability to effectively cost product decisions, the ability to present information in a manner that enhances understanding, information presented to have both credibility and be transparent, the ability to assess staffing costs, the ability to support the integration of business strategy and information sources, and to assess the return on assets. They believed that the information generated within the accounting information system is able to better meet the financial decision making needs of the firm in decisions regarding competition.

On a number of issues, for example, the non-IPO SMEs indicated that they found information generated through the accounting information system relating to the ability to assess growth in sales and information related to the assessment of the quality of products or services was more important to meet financial decision making needs of the firm as compared to the IPO SMEs.

In this context two hypotheses were posed and found to be supported:

- H8 SMEs in Thailand believe that their decision making capability is enhanced with through the application of technology.
- H9 IPO SMEs are more likely than non-IPOs SMEs in Thailand to believe that their decision making capability is enhanced with through the application of technology.

6.3 Implication of this study

Prior research in this area has focused on the adoption of technology by large companies and general small business. This study extends this area of research addressing small business and investigating risk management, accounting information systems, internal control, and technology in small business. Further the study explores the differences in these areas between IPO and non-IPO SMEs.

Both IPO and non-IPO SMEs adopted information technology within their accounting information system. However, IPO SMEs were more likely to use technology, adopt computerised accounting information systems paying appropriate attention to internal controls and risk management than non-IPO SMEs. The use of computerised systems was common across both sampled groups though the sophistication of the system in place may differ and the non-IPO SME was more inclined to adopt a mixed system, that is, to use technology but retain manual practices in some areas. Given that the IPO SME is generally larger, has available higher levels of funds, is more likely to be better informed in business skills such as budgeting, is often able to buy management and other skills required, and to implement more sophisticated accounting information systems the comparison and differences identified from the non-IPO is not surprising. For example, the IPO SMEs saw the role of technology to be more relevant to financial information utility rather than in financial report preparation. While the non-IPO saw the focus to be more related to management accounting and financial report preparation. In effect, the study found that both the IPO and the non-IPO SME indicate that information technology, risk management and internal control are important. But they each could see different roles that information technology and the accounting information system could play for the firm at the level at which they operate. Both believed that the application of technology within the accounting information system improves the quality of financial information that can be produced to meet the decision making needs of the SME.

The study found that technology allows firms to better capture and record business events, improve the accuracy and reliability of data processing, and provides better data in terms of timeliness, relevance and reliability to support evaluations of firms. It was considered that technology supported the production of better advice to management, reports for decision making were better able to be prepared, information was available to assist in the management of risk and improved financial management and reporting was available to meet stakeholder information needs. Technology was seen as an enabler that adds value by providing a means to improve the effectiveness of business operations and to enhance the decision making process.

In term of the development of systems of internal control in both IPO and non-IPO SMEs in Thailand, the results of this study show that both groups have a system in place. An adequate internal control system and risk management system supported by technology within accounting information system for both IPO and non-IPO SMEs was seen to be important and is argued to assist improving the accuracy and reliability of financial reporting for Thai SMEs. However, IPO SMEs as listed companies on the MAI stock market have more sophisticated systems in place than non-IPO SMEs such as using internal controls in accordance with COSO and according to regulations in the stock market. Whilst, it would appear that non-IPO SMEs use simpler methods than non-listed companies. Further work could be undertaken to isolate the reasons for such differences and whether action should be taken to raise the standard of the non-IPO SME. Both size and the presence of regulation are likely to play a role in producing differences noted. Given the importance attached to technology by both groups and the perceived improvement in the quality of financial information available for decision making it would seem that the Thai government should continue to encourage and act to increase the awareness of the benefits of the adoption of information technology, in particular in the accounting information system.

In addition, this study confirms that owner/manager characteristics such as education level, innovativeness, level of IT knowledge, and IT training experience affect IT adoption suggesting that the Thai government should continue to support IT development for small business and encourage entrepreneurs to develop and invest in appropriate technology. Additionally, the MAI should increase the awareness of the benefits of being listed on the MAI and encourage non-IPO SMEs to consider listing.

A problem that was highlighted was the training need for staff. The Thai government should continue providing suitable IT training courses (particularly with accounting applications) and management programs for small business entrepreneurs. In order to encourage non-IPO SMEs to move forward and develop their firm for entry to the MAI to enhance the ability to raise funds from the public further research is needed to ascertain how IPO and non-IPO SMEs actually cope with internal control and risk management to enhance their information quality generated within the accounting information system. Furthermore, seeking an appropriate model to manage risk within the accounting information system for Thai SMEs both IPO and non-IPO needs to be conducted by further research.

6.4 Limitations

As with most studies this one was not without its limitations. The study was location specific, in that it looked at IPO and non-IPO SMEs in the Bangkok geographical area. It may be different results may be found looking at non-IPOs outside of this area, perhaps finding that manual approaches were more commonly still in place. While the study adopted the definition of small enterprise provided by the Ministry of Industry, Thailand this does effectively mix small and medium enterprises. Although IPO SMEs are by and large small firms that have grown to medium firms prior to entry to the MAI.

6.5 Summary

In this chapter discussion of the results of this study and implications of this were discussed. Areas of further research were identified, as were limitations of this study.

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APPENDIX ONE:
Covering letter (English version)



UNIVERSITY OF TASMANIA
School of Accounting and Corporate Governance

«FirstName» «LastName»
«JobTitle»
«Company»
«Address1»
«Address2» «City»
«State» «PostalCode»

<Date>

Dear «FirstName»

My name is BUNGON SAWATSUK and I am currently enrolled in a Doctoral degree in Accounting at the University of Tasmania under the supervision of Dr Trevor Wilmshurst. I am conducting research into the enhancement of internal control and risk management in the Accounting Information System in Thai Small to Medium Enterprises (SMEs). The study aims to assess the present position and the success of the implementation of the Accounting Information System (AIS) in these firms in relation to the internal control system, technology, and risk management and to investigate how technology within the AIS can be used to improve internal control and manage risk. It is believed that the information collected will be useful in assisting Thai SMEs to operate more efficiently and effectively, to be competitive in globalised markets, to identify how to better meet the needs of stakeholders and to enable a better understanding of the issues involved in internal control and risk management within the area of the accounting information systems.

The purpose of this letter is to request that you complete the attached survey. The study involves a comparison between IPOs SMEs in Market for Alternative Investment (MAI) and Non-IPOs. This mail survey is a crucial part of my data collection and your participation will be very much appreciated. It is envisaged that this mail survey would take approximately 30 - 45 minutes to complete.

Please note that the actual survey instrument does not request any identifying details, and so your responses will not be identifiable in my thesis or any other research output from this study. In any case, the data from the completed surveys will be reported in an aggregated form, so there is no possibility that you or your organization will be identifiable.

Your name is, however, requested on a separate sheet but only if you wish to be involved in the second stage of this study, namely an interview to investigate the themes arising out of the completed surveys. If you express an interest in participating in an interview, the separate sheet containing your details will not be linked to your survey responses, and will be stored separately from those responses. You will then be sent a separate information sheet explaining the interview stage, at which time you will be able to decide whether or not you wish to proceed with the interview phase. In any event, no attempt will be made to identify your organization, even if possible, in any published material. All raw data collected from this study will be securely stored at the School of Accounting and Corporate Governance for a period of five years. At the expiry of this five year period, the data will be destroyed. If you would like a copy of the summary results please contact me and I will forward a copy on completion of the study.

This study has been approved by the Human Research Ethics Committee (Tasmania) Network. If you have any concerns of an ethical nature or complaints about the nature in which the project is conducted, you may contact the Executive Officer of the Human Research Ethics Committee (Tasmania) Network.

Executive Officer: Amanda McAully Email: Amanda.McAully@utas.edu.au
Phone: 61 3 62262763 Fax: 61 3 62267148

Please understand that your participation is entirely voluntary and evidenced by returning the completed survey. Of course, your participation would be appreciated and I look forward to receiving your completed questionnaire by May 23,2006. Should you have any queries regarding the project or questionnaire, please feel free to contact me on email: bungons@utas.edu.au or 054-484222-4 or my principal supervisor, Dr. Trevor Wilmshurst on email: Trevor.Wilmshurst@utas.edu.au. Your reply can be returned to me [Naresuan University (Phayao Campus) Amphur Muang, Phayao 56000,Thailand] in the prepaid envelope supplied.

I look forward to hearing from you.

Yours sincerely,

Ms Bungon Sawatsuk
University of Tasmania
School of Accounting and Finance
Locked Bag 1314 ,Launceston, Tasmania 7250
Australia
Phone : 036324.....
E-mail : bungons@utas.edu.au
PhD Candidate
Student ID : 040988
School of Accounting and Corporate Governance
University of Tasmania

Co-signed:

Dr Trevor Wilmshurst
Senior Lecturer, Head of School
School of Accounting and Corporate Governance
University of Tasmania

APPENDIX TWO:
Covering letter (Thai version)



UNIVERSITY OF TASMANIA
School of Accounting and Corporate Governance

วันที่ พฤษภาคม พ.ศ. 2549

เรียน

ข้าพเจ้า นางสาวบังอร สวัสดิ์สุข ปัจจุบันกำลังศึกษาระดับปริญญาเอก สาขาวิชาการบัญชี ที่มหาวิทยาลัยแทสมาเนีย (University of Tasmania) ณ ประเทศAustralia ภายใต้การปรึกษาของ Dr Trevor Wilmshurst ซึ่งได้ทำการวิจัยในหัวข้อเรื่อง การเพิ่มศักยภาพการควบคุมภายในและการบริหารความเสี่ยงในระบบสารสนเทศบัญชีของธุรกิจขนาดกลางและขนาดย่อมในประเทศไทย) Enhancing of Internal Control and Risk Management within Accounting Information System: The case study of Thai SMEs โดยมีวัตถุประสงค์ที่จะประเมินสถานะปัจจุบันและผลสำเร็จของการนำระบบสารสนเทศบัญชีมาใช้ในบริษัทที่เชื่อมกับระบบควบคุมภายใน เทคโนโลยี และการบริหารความเสี่ยง และเพื่อตรวจสอบว่าเทคโนโลยีภายในระบบสารสนเทศบัญชีสามารถนำมาใช้เพื่อพัฒนาระบบควบคุมภายในและจัดการความเสี่ยงได้อย่างไร ผลประโยชน์ที่จะได้รับจากการทำวิจัยในครั้งนี้ จะมีส่วนช่วยให้ธุรกิจขนาดกลางและขนาดย่อมของประเทศไทย มีความสามารถในการดำเนินกิจการอย่างมีประสิทธิภาพและประสิทธิผลมากยิ่งขึ้น มีศักยภาพเพียงพอที่จะร่วมลงแข่งขันด้านการค้าในตลาดโลก สามารถตอบสนองความต้องการของผู้ที่เกี่ยวข้องทั้งภายในและภายนอกกิจการได้ และสามารถเสริมสร้างความเข้าใจที่ชัดเจนยิ่งขึ้นเกี่ยวกับระบบการควบคุมภายในและการบริหารความเสี่ยงภายในระบบสารสนเทศทางบัญชีของธุรกิจขนาดกลางและขนาดย่อมของประเทศไทย

วัตถุประสงค์ของจดหมายฉบับนี้คือเพื่อขอความอนุเคราะห์จากท่านสละเวลาอันมีค่าของท่าน ประมาณ 45-30 นาที ในการตอบแบบสอบถามที่แนบมาพร้อมนี้ ซึ่งแบบสอบถามชุดนี้เป็นส่วนหนึ่งของการเก็บข้อมูลของการศึกษาของข้าพเจ้า การวิจัยนี้เป็นการศึกษาเปรียบเทียบระหว่างธุรกิจขนาดกลางและขนาดย่อมของกลุ่มที่จดทะเบียนและไม่จดทะเบียนเข้าตลาดหลักทรัพย์ เอ็ม เอ ไอ (MAI) (ในเขตพื้นที่กรุงเทพฯ แบบสอบถามฉบับนี้ไม่ได้ให้ท่านระบุชื่อบริษัท หรือชื่อของผู้ตอบแบบสอบถามแต่อย่างใด ดังนั้นคำตอบที่ท่านตอบในแบบสอบถามจึงอยู่ในภาพรวมโดยไม่ระบุแหล่งที่มาแต่อย่างใด

การศึกษานางวิจัยนี้ แบ่งวิธีการเก็บข้อมูลเป็นสองขั้นตอน คือ ขั้นตอนที่ 1 โดยใช้แบบสอบถาม และขั้นตอนที่ 2 คือการสัมภาษณ์ ถ้าท่านต้องการมีส่วนร่วมในการให้สัมภาษณ์ เพื่อเป็นการตอบรับกรุณากรอกข้อมูลของท่านลงในกระดาษที่แนบมาพร้อมนี้ ซึ่งแตกต่างหากจากตัวแบบสอบถาม และท่านจะได้รับข้อมูลอธิบายขั้นตอนการสัมภาษณ์ และเวลาที่ท่านสามารถตัดสินใจว่าจะดำเนินการให้สัมภาษณ์หรือไม่ ในแต่ละช่วงจะไม่มีภาระระบุชื่อ

องค์กรของท่านในสิ่งพิมพ์ใด ข้อมูลดิบทั้งหมดที่ได้จากการศึกษาครั้งนี้จะถูกจัดเก็บไว้อย่างปลอดภัยที่ School of Accounting and Finance เป็นเวลา 5 ปี เมื่อครบระยะเวลาข้อมูลจะถูกทำลาย เมื่องานวิจัยนี้เสร็จสมบูรณ์แล้ว หากท่านประสงค์ที่จะขอรับทราบผลการศึกษาจากการวิจัย ข้าพเจ้ามีความยินดีที่จะดำเนินการจัดส่งให้ท่าน

การศึกษานี้ได้ผ่านการตรวจสอบและรับรองจาก the Human Research Ethics Committee (Tasmania) Network. เรียบร้อยแล้วหากท่านมีข้อสงสัยเกี่ยวกับจรรยาบรรณ หรือข้อร้องเรียนเกี่ยวกับการทำวิจัยของการศึกษานี้ กรุณาติดต่อที่

Executive Officer: Amanda McAully
Phone: 61 3 62262763

Email: Amanda.McAully@utas.edu.au
Fax: 61 3 62267148

ข้าพเจ้าในฐานะผู้วิจัยของโครงการนี้ ขอขอบพระคุณท่านเป็นอย่างยิ่งในการมีส่วนร่วมของท่านครั้งนี้ สกนนี้ หากท่านมีข้อซักถามเกี่ยวกับโครงการหรือแบบสอบถาม สามารถติดต่อข้าพเจ้าได้ที่ bungons@utas.edu.au หรือ 054-484222-4 หรือที่ อาจารย์ที่ปรึกษาของข้าพเจ้า Dr. Trevor ข้าพเจ้าหวังเป็นอย่างยิ่งว่าจะได้รับความร่วมมือจากท่านในการตอบคำถามในแบบสอบถามชุดนี้และผนึกใส่ซองที่จ่ายค่าไปรษณียากรเรียบร้อยแล้วที่ข้าพเจ้าได้แนบมาพร้อมนี้แล้ว และจัดส่งมายัง มหาวิทยาลัยนเรศวร วิทยาเขตสารสนเทศพะเยาภายในวันที่ 20 มิถุนายน พ.ศ 2549 .
จักเป็นพระคุณยิ่ง

ขอแสดงความนับถือ

(นางสาวบังอร สวัสดิ์สุข)

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School of Accounting and Corporate Governance
University of Tasmania

Co-signed:

Dr Trevor Wilmshurst
Senior Lecturer, Head of School
School of Accounting and Corporate Governance
University of Tasmania

APPENDIX THREE:
Questionnaire and interview (English version)

Enhancing Internal Control and Risk Management in the Accounting Information System – The Case of the Thai SME.

This questionnaire is intended to offer an insight into the internal control and risk management attitudes and practices in place in the Thai Firm. Practices looked at include the new IPO (Initial Public Offering) firms and non IPO firms in the Bangkok region. Your response will be invaluable to the conduct of this research, and the confidentiality of your responses is guaranteed. Thank you for the effort you are making in responding to this questionnaire, a vital part of my doctoral research.

The questionnaire has four sections, they are:

Section 1: Basic data about your firm, and your role.

Section 2: How your firm utilises information technology within the
Accounting Information System

Section 3: What Risk Management practices are adopted in the Accounting
Information System (AIS) of your firm

Section 4: How the application of technology offers support to your Decision
Making System

To assist your response to this questionnaire, a number of terms used are defined as below:

- **Accounting Information System (AIS):** The system that organises the accumulation, classification, processing, analysing, and communication of financially orientated information to stakeholders. It is composed of people, equipment and other resources to provide the framework for the transformation of data into information for decision making.
- **Internal Control System:** Security in place to provide reasonable assurance that the organization will achieve its objectives and mission. It is the integration of the activities, plans, attitudes, policies, and efforts of the people of an organization working together.
- **Risk Management:** Risk management involves the steps taken to understand and control for anything that may impede an organization from achieving its objectives.
- **Information Technology (IT):** Technology covers hardware, software, operating system, database management system, networking, multimedia, etc. which is used to operate and develop organization's information system.

Section One: Basic Data

.....
Please place a **Cross** 'X' in the appreciate box next to your response to each question.

.....
1. What is your major role in the firm?

- Owner
 Manager
 Accountant
 Secretary
 Other, please specify _____

2. What is your gender?

- Male
 Female

3. In which age group are you?

- ≤ 30 years
 31-40 years
 41-50 years
 ≥50 years

4. What is your HIGHEST educational qualification?

- Primary school
 High school or equal
 Diploma
 Bachelor's Degree
 Master's Degree
 Doctor of Philosophy
 Other (please specify) _____

5. In which of the following industrial sectors does your firm operate?

- Manufacturing
 Wholesaling
 Retailing
 Trading
 Services
 Other (please specify) _____

6. What is your main product/service?

- Food & Drink
 Advanced Engineering & Metal
 Digital Industries
 Chemicals
 Biotechnology
 Other, please specify _____

7. How long has your company been established?

- less than 12 months
 1-3 years
 4-6 years
 7-10 years
 More than 10 years

8. Which of the following best describes the form of your business organisation?

- Sole trader
 Partnership
 Company
 Other (Please specify) _____

9. What is the value of fixed assets in your business?

- ≤Baht 30 million
 Baht 31-50 million
 Baht 51-60 million
 Baht 61-100 million
 ≥Baht 100 million

10. What is the total number of full time equivalent employees working for your business?

- ≤15 people
 16-25 people
 26-30 people
 31-50 people
 ≥50 people

Section 2: How your firm utilises information technology within the Accounting Information System

11. How does your firm process Accounting Information? Do you have a:

- Manual system (go to question 14) Computerized system
- A combination of manual and computerized system
- Other, please specify _____

12. How important are the following as reasons for adopting Information Technology within the firms AIS?

[Please tick a number for each of the statements below, using the following scale

1 = Completely Unimportant 2 = Not Important 3 = Not Considered 4 = Important 5 = Highly Important]

	1	2	3	4	5
Improved ability to capture and record business operations and business events.					
Ability to advise management and to prepare reports for decision making					
To assist in providing timely information to support an effective performance evaluation system					
Enhances the accuracy and reliability with which data is processed .					
Better information (timely, relevant and reliable) to management to assist in reducing costs and improving productivity.					
Better information (timely, relevant and reliable) to management to assist in identifying and minimising risks faced by company.					
Technology has become a effective way to facilitate financial management					
Technological approaches offer the ability to increase the value and effectiveness of business operations					
The ability to utilise technology has been facilitated by access to low cost of microcomputers and user-friendly accounting software					
Technology has assisted in allowing the careful attention to financial management and financial reporting required to meet compliance requirements.					

13. What role does Information Technology play in your Accounting Information System?

[Please tick a number for each of the statements below, using the following scale

1 = Completely Unimportant 2 = Not Important 3 = Not Considered 4 = Important
5 = Highly Important]

	1	2	3	4	5
To process transactions					
To prepare financial reports					
To prepare management reports					
To present reports in a format suited to management analytical requirements					
To provide instant real time information					
To facilitate an inquiry/search process					
To allow interactive processing					
To facilitate the editing of reports					
To facilitate integration with other areas of operation of the business					
To facilitate the preparation of up-to-date financial and analytical reports					

14. If you **do not** use Information Technology in your AIS how important are the following reasons in this decision?

[Please tick a number for each of the statements below, using the following scale

1 = Completely Unimportant 2 = Not Important 3 = Not Considered 4 = Important
5 = Highly Important]

	1	2	3	4	5
Senior management's attitude to information technology					
Senior management's limited accounting knowledge					
Senior management's current information systems knowledge					
Senior management's innovativeness					
Lack of financial resources to invest in Technology					
Lack of skilled IT personnel to facilitate IT adoption					
Lack of resources to employ a suitable IT person					
Available time to implement an IT					
Company culture to IT					
Company location to use IT					
IT is not suited to the nature of the business					
Company size is not suited to use of IT					
The quality of information to be generated					
Concerns with data security					
Lack of information on Technology					
The application of IT is too costly					

Section 3: What Risk Management practices are adopted in the Accounting Information System (AIS) of your firm

15. How important are each of the following factors to minimize risk arising from your Accounting Information System?

[Please tick a number for each of the statements below, using the following scale

1 = Completely Unimportant 2 = Not Important 3 = Not Considered 4 = Important
5 = Highly Important]

	1	2	3	4	5
Risk management is a priority in your organisation					
Risk management is a priority for each of your employees					
An Enterprise Risk Management framework is in place in your organisation					
The staff performance evaluation system is part of the internal control system.					
The scope and goals of the firm's approach to risk management activities are clearly explained to staff					
Employees receive appropriate training and guidance to carry out their job responsibilities					
Proper authorization processes and security practices are in place					
A review and reconciliation of recorded transactions are routinely performed					
The management team have designed and raised organizational awareness to a business recovery plan					
Back-up systems are in place in the event of a systems failure					
A regular review and evaluation of risk management practices is in place					
A policy of continuous improvement practices is in place					
Wherever practical separation of duties occurs					
Review the effectiveness of the risk management system at regular intervals					
Clearly established company policies and procedures to identify risk management practices					
Regular review of the effectiveness of the internal control system					
Having a well designed Information system is necessary for a good (financial) assessment system					
A clear policy and authority for risk management in company					
Clear/transparent risk management policy on technology issue, debt issue etc.					
Experts and training team for staffs or responsible persons to be aware of risk management policy					
Devices/ equipment in assisting and providing convenience for an emergent risk management					
Well cooperated / harmonious agreement among each executive in organization					
To transfer a drastic risk which is beyond the organization's ability to invest and prevent to other department of organisation					
Internal audit function to investigating and assess risk and the effectiveness of the internal control system					

Section 4: How the application of technology offers support to your financial decision making?

16. What do you believe in the importance of your AIS in providing information financial decision making?

[Please tick a number for each of the statements below, using the following scale

1 = Completely inefficient 2 = inefficient 3 = Not Considered 4 = efficient 5 = Extremely efficient]

	1	2	3	4	5
To assess profit and profitability					
To assess the quality of products or services					
To assess staffing costs					
To make various product choice/product mix selections					
The costing of product cost decisions					
To support the integration of business strategy and information sources					
To assess Return on Assets					
To assess growth in sales					
To assess overall firm financial performance					
To present information in a way which improves understanding of information generated.					
To present information in a way which improves conciseness and clarity					
To offer credibility and transparency of information generated.					
To provide timely information					
To enhance the preparation of reports for use in decision making					

17. How do you believe the performance of your Accounting Information System in financial decision making in comparison to your competitors?

[Please tick a number for each of the statements below, using the following scale
 1 = Completely inefficient 2 = inefficient 3 = Not Considered 4 = efficient
 5 = Extremely efficient]

	1	2	3	4	5
To assess profit and profitability					
To assess the quality of products or services					
To assess staffing costs					
To make various product choice/product mix selections					
The costing of product cost decisions					
To support the integration of business strategy and information sources					
To assess Return on Assets					
To assess growth in sales					
To assess overall firm financial performance					
To present information in a way which improves understanding of information generated.					
To present information in a way which improves conciseness and clarity					
To offer credibility and transparency of information generated.					
To provide timely information					
To enhance the preparation of reports for use in decision making					



I am prepared to be involved in the interview process.

Name:.....

Contact:.....

Thank you very much for taking the time to complete this questionnaire.

Enhancing Internal Control and Risk Management in the Accounting Information System – The Case of the Thai SMEs.

(Stage 2: Interview)

Stage 1: Seek out the interviewee

Greet the interviewee. Thanks them for agreeing to take part. Reaffirm the purpose of the interview and how the interview will proceed. Ask if this will be acceptable- indicate the interview should take about half an hour and ask permission to use a tape recorder.

Stage 2: Commence the interview. If permissible, turn tape recorder on.

Stage 3: Conclusion of Interview:

Thank the interviewee. Ask if they would like a copy of the interview. The interview will be transcribed over the next few weeks and post to interviewee via mail. Interviewee will have a chance to make additions, deletions or other make changes to the text of transcript.

Introduction

Hello my name is BUNGON SAWATSUK and I am currently enrolled in a Doctoral degree in Accounting at the University of Tasmania under the supervision of Dr Trevor Wilmshurst. I am conducting research into the enhancement of internal control and risk management in the Accounting Information System in Thai Small to Medium Enterprises (SMEs). The study aims to assess the present position and the success of the implementation of the Accounting Information System (AIS) in these firms in relation to the internal control system, technology, and risk management and to investigate how technology within the AIS can be used to improve internal control and manage risk. It is believed that the information collected will be useful in assisting Thai SMEs to operate more efficiently and effectively, to be competitive in globalised markets, to identify how to better meet the needs of stakeholders and to enable a better understanding of the issues involved in internal control and risk management within the area of the accounting information systems.

The purpose of this interview is to find out about your own views, first of the need for the Accounting Information System, and what risk management practices are adopted in the firm to protect the Accounting Information System.

I do need to stress that we are collecting information from a cross section of people (mainly) within IPO and Non-IPO SMEs, and all individuals' view will be treated confidentially.

Section 1: Interviewee details

Name: _____

Job title _____

Organization _____

Location _____

Date of interview _____

These questions will form the basis of the semi-structured interview.

Sections 2: Interview questions

1. How does your firm process the Accounting Information System.?
2. What are reasons for adopting that method followed the question 1?
3. What role does Information Technology play in your Accounting Information System?
4. How does technology affect your ability to make financial decision?
5. How does your firm approach risk management?
6. Do you have specific management practices in relation to Accounting Information System?
7. How do you manage the Internal Control System in your company to minimize risk arising from your Accounting Information System?
8. How do you believe the performance of your Accounting Information System in financial decision making in comparison to your competitors?

**APPENDIX FOUR:
Questionnaire and interview (Thai version)**

**การเสริมสร้างศักยภาพการควบคุมภายในและการบริหารความเสี่ยงในระบบสารสนเทศทางบัญชี
กรณีศึกษาธุรกิจขนาดกลางและขนาดย่อม (SMEs) ของประเทศไทย**

แบบสอบถามนี้จัดทำขึ้นเพื่อต้องการศึกษาทัศนคติและการปฏิบัติในด้านการควบคุมภายใน และการบริหารความเสี่ยง ภายในระบบสารสนเทศทางบัญชีของธุรกิจขนาดกลางและขนาดย่อมของประเทศไทย โดยมุ่งเน้นศึกษาไปยังกลุ่มธุรกิจขนาดกลางและขนาดย่อมที่จดทะเบียนในตลาดหลักทรัพย์เอ็ม เอ ไอ (Market for Alternative Investment :MAI) และกลุ่มธุรกิจขนาดกลางและขนาดย่อมที่ไม่ได้จดทะเบียนในตลาดหลักทรัพย์ MAI ในเขตพื้นที่กรุงเทพฯ และปริมณฑล

การตอบแบบสอบถามของท่านมีคุณค่าอย่างยิ่งในการทำวิจัยเพื่อการศึกษาระดับปริญญาเอก ผู้วิจัยขอรับรองว่า ข้อมูลที่ได้จากการตอบแบบสอบถามจะไม่อ้างอิง หรือระบุชื่อสถานประกอบการของท่านแต่อย่างใดทั้งสิ้น ขอขอบพระคุณท่านที่สละเวลาอันมีค่าของท่านตอบแบบสอบถามชุดนี้

แบบสอบถามมี 4ส่วน คือ

ส่วนที่ 1 ข้อมูลพื้นฐานของธุรกิจและบทบาทของผู้ตอบแบบสอบถาม

ส่วนที่ 2 ลักษณะการนำเทคโนโลยีมาใช้กับระบบสารสนเทศบัญชีของธุรกิจ

ส่วนที่ 3 การบริหารความเสี่ยงที่นำมาใช้ในระบบสารสนเทศบัญชีในธุรกิจ

ส่วนที่ 4 การนำเทคโนโลยีมาช่วยในการตัดสินใจทางการเงินของธุรกิจ

นิยามคำศัพท์ที่ใช้ในวิจัยในแบบสอบถาม

ระบบสารสนเทศทางบัญชี (Accounting Information System) หมายถึง เป็นระบบที่พัฒนาขึ้นมาภายในกิจการ โดยมีการใช้ ทรัพยากรบุคคล และอุปกรณ์ต่างๆ เพื่อทำหน้าที่หลักในการบันทึกข้อมูลประมวลผล และจัดทำสารสนเทศทางการบัญชี ในรูปแบบของรายงานทางการเงินและรายงานเพื่อการบริหารให้แก่ผู้ใช้ภายในและภายนอกกิจการใช้ประกอบในการตัดสินใจทางธุรกิจ

การควบคุมภายใน (Internal control) หมายถึง ระบบการตรวจสอบภายในองค์กรมีไว้เพื่อให้องค์กรมั่นใจว่าจะบรรลุวัตถุประสงค์และภารกิจที่วางไว้ ซึ่งเกิดจากการร่วมมือกันปฏิบัติงานระหว่างผู้บริหารทุกระดับและพนักงานทุกคนในองค์กร

การบริหารความเสี่ยง (Risk management) หมายถึง การบริหารความเสี่ยงอันเกี่ยวข้องกับขั้นตอนต่างๆ เพื่อนำไปสู่ความเข้าใจและการควบคุมสำหรับทุกอย่างที่มีโอกาสที่จะเกิดความผิดพลาด ความเสียหาย การรั่วไหล ความสูญเสีย ความสูญเปล่า หรือเหตุการณ์ซึ่งไม่พึงประสงค์ที่ทำให้งานไม่ประสบความสำเร็จตามวัตถุประสงค์และ เป้าหมายขององค์กรที่กำหนดไว้

เทคโนโลยีสารสนเทศ (Information Technology) หมายถึง เป็นเทคโนโลยีที่เกี่ยวข้องกับการนำฮาร์ดแวร์ (Hardware) ซอฟต์แวร์ (Software) การจัดการฐานข้อมูล (Database Management) และเทคโนโลยีอื่นๆ มาใช้ในระบบสารสนเทศ เพื่อบันทึก ประมวลผล และจัดส่งข้อมูลหรือสารสนเทศให้แก่ผู้ใช้ที่เกี่ยวข้องทั้งภายในและนอกกิจการ

ผู้ทำวิจัย ...นางสาวบังอร สวัสดิ์สุข ; bungons@postoffice.newnham.utas.edu.au

ส่วนที่ 1 ข้อมูลเบื้องต้นของบริษัทและบทบาทของท่าน

กรุณาใส่เครื่องหมาย X ใน ที่ท่านเลือกตอบ
ของคำถามแต่ละข้อต่อไปนี้

1. บทบาทหลักของท่านในบริษัท

- เจ้าของกิจการ
 ผู้จัดการ
 นักบัญชี
 เลขา
 อื่น ๆ กรุณาระบุ _____

2. เพศ

- ชาย
 หญิง

3. อายุ

- น้อยกว่าหรือเท่ากับ 30 ปี
 ระหว่าง 31-40 ปี
 ระหว่าง 41-50 ปี
 มากกว่า 50 ปี

4. วุฒิมัธยมศึกษาสูงสุด

- ประถมศึกษา
 ม. 6. หรือเทียบเท่า
 อนุปริญญา
 ปริญญาตรี
 ปริญญาโท
 ปริญญาเอก
 อื่น ๆ กรุณาระบุ _____

5. บริษัทของท่านจัดอยู่ในประเภทกิจการใด

(เลือกตอบได้มากกว่า 1 คำตอบ)

- ด้านการผลิต
 คำสั่ง
 คำปลีก
 ธุรกิจเทคโนโลยีสารสนเทศ
 ด้านบริการ
 ธุรกิจการเกษตร
 อื่น ๆ กรุณาระบุ _____

6. บริษัทมีสินค้าหรือบริการหลักตรงกับข้อใด

(เลือกตอบได้มากกว่า 1 คำตอบ)

- อาหารและเครื่องดื่ม
 วิศวกรรมก้ำวน้ำระดับสูง
 อุตสาหกรรมดิจิทัล
 วัสดุเคมี
 จุลชีวเทคโนโลยี
 อื่น ๆ กรุณาระบุ _____

7. ระยะเวลาในการดำเนินงานของบริษัท

- น้อยกว่าหรือเท่ากับ 1 ปี
 ระหว่าง 1-5 ปี
 ระหว่าง 6-10 ปี
 นานมากกว่า 10 ปี

8. ลักษณะการประกอบการของธุรกิจจัดอยู่ใน

ประเภท

- เจ้าของคนเดียว
 ห้างหุ้นส่วน
 บริษัท
 บริษัทมหาชน
 อื่น ๆ กรุณาระบุ _____

9. มูลค่าสินทรัพย์ถาวรของบริษัท

- น้อยกว่าหรือเท่ากับ 30 ล้านบาท
 ระหว่าง 31-50 ล้านบาท
 ระหว่าง 51-60 ล้านบาท
 ระหว่าง 61-100 ล้านบาท
 มากกว่า หรือเท่ากับ 100 ล้านบาท

10. จำนวนพนักงานทั้งหมดที่ทำงานเต็มเวลาของ บริษัท

- น้อยกว่า หรือเท่ากับ 15 คน
 ระหว่าง 16-25 คน
 ระหว่าง 26-35 คน
 ระหว่าง 36-45 คน
 มากกว่า หรือเท่ากับ 46 คน

ส่วนที่ 2 ลักษณะการนำเทคโนโลยีมาใช้กับระบบสารสนเทศบัญชีของบริษัท

11. บริษัทของท่านดำเนินการจัดทำสารสนเทศบัญชีอย่างไร

- บันทึกข้อมูลทางบัญชีด้วยมือ (Manual System) (ถ้าเลือกตอบข้อนี้ ข้ามไปตอบข้อ 16, 15, 14 และ 17)
- บันทึกข้อมูลทางบัญชีด้วยระบบคอมพิวเตอร์ (Computerized System) ถ้าเลือกตอบข้อนี้ ไม่ต้องตอบข้อ 14)
- ใช้ระบบผสมผสานระหว่างด้วยมือกับคอมพิวเตอร์ (ถ้าเลือกตอบข้อนี้ ไม่ต้องตอบข้อ 14)
- อื่นๆ กรุณาระบุ _____

12. เหตุผลสำคัญของการนำเทคโนโลยีมาใช้ในการจัดการระบบสารสนเทศทางบัญชีของบริษัท

[กรุณาใส่เครื่องหมาย X ที่ช่องหมายเลขที่เป็นคำตอบของคำถามแต่ละข้อ โดย 1 = ไม่สำคัญเลย 2 = ไม่สำคัญ 3 = ไม่อยู่ในการพิจารณา 4 = สำคัญ 5 = สำคัญมาก]

	1	2	3	4	5
เทคโนโลยีช่วยเพิ่มศักยภาพในการบันทึกจัดเก็บข้อมูลและเหตุการณ์ทางธุรกิจ					
ศักยภาพของเทคโนโลยีในการให้คำแนะนำด้านการจัดการและเพื่อจัดเตรียมรายงานเพื่อใช้ในการตัดสินใจขององค์กร					
การใช้เทคโนโลยีทำให้ได้ข้อมูลที่ถูกต้องและทันตามเวลา ช่วยให้ระบบการประเมินผลการทำงานขององค์กร มีประสิทธิภาพขึ้น					
เทคโนโลยีช่วยเพิ่มความถูกต้องความน่าเชื่อถือของข้อมูลที่ใช้					
การใช้เทคโนโลยีได้ข้อมูลที่ดีกว่า คือถูกต้องแม่นยำ น่าเชื่อถือ ทันตามเวลาที่ต้องการช่วยให้ฝ่ายบริหารลดต้นทุน และเพิ่มศักยภาพในการผลิตอย่างมีประสิทธิภาพมากขึ้น					
การใช้เทคโนโลยีได้ข้อมูลที่ดีกว่า คือถูกต้องแม่นยำ น่าเชื่อถือ ทันตามเวลาที่ต้องการช่วยให้ฝ่ายบริหารค้นพบ และลดความเสี่ยงขององค์กรที่เผชิญอยู่ได้					
การใช้เทคโนโลยีเป็นวิธีการที่มีประสิทธิภาพวิธีหนึ่งซึ่งช่วยทำให้การจัดการด้านการเงินสะดวกขึ้น					
วิธีการทางเทคโนโลยีเพิ่มสมรรถนะในการเพิ่มศักยภาพของการดำเนินการทางธุรกิจ					
ประโยชน์จากอุปกรณ์คอมพิวเตอร์ที่ถูกลง และ การใช้งานที่ง่ายของโปรแกรมบัญชี ทำให้เกิดการนำเทคโนโลยีมาใช้งาน					
เทคโนโลยีมีส่วนช่วยในการบริหารการเงินและการจัดเตรียมรายงานทางการเงินให้ เป็นไปตามความต้องการด้านข้อมูลของบริษัท					

13. บทบาทของเทคโนโลยีในการจัดการระบบสารสนเทศทางบัญชีภายในธุรกิจของท่าน

[กรุณาใส่เครื่องหมาย X ที่ช่องหมายเลขที่เป็นคำตอบของคำถามแต่ละข้อ โดย 1 = ไม่สำคัญเลย 2 = ไม่สำคัญ
3 = ไม่อยู่ในการพิจารณา 4 = สำคัญ 5 = สำคัญมาก]

	1	2	3	4	5
ใช้เทคโนโลยีในการประมวลผลรายการค้าต่างๆ ของบริษัท					
ใช้เทคโนโลยีในการจัดเตรียมรายงานทางการเงิน					
ใช้เทคโนโลยีในการจัดเตรียมการรายงานด้านการจัดการ					
ใช้เทคโนโลยีในการเสนอรายงานในรูปแบบที่เหมาะสมกับฝ่ายบริหารเพื่อใช้ในการวิเคราะห์					
ใช้เทคโนโลยีในการประมวลผลแบบทันที (Real time processing)					
ใช้เทคโนโลยีช่วยในการสอบถามหรือค้นหาข้อมูลของบริษัท					
ใช้เทคโนโลยีช่วยในการประมวลผลแบบโต้ตอบได้ตลอดเวลาที่ต้องการ)Interactive processing)					
ใช้เทคโนโลยีช่วยในการแก้ไขและปรับปรุงรายงานต่างๆ ของบริษัท					
ใช้เทคโนโลยีช่วยในการรวบรวมข้อมูลจากหน่วยงานต่างๆของบริษัท					
ใช้เทคโนโลยีช่วยในการจัดเตรียมการปรับปรุงข้อมูลทางการเงินให้เป็นปัจจุบันและวิเคราะห์รายงานของบริษัท					

14. สาเหตุที่บริษัทของท่านไม่นำเทคโนโลยีมาใช้ในการจัดทำข้อมูลสารสนเทศทางบัญชี

[กรุณาใส่เครื่องหมาย X ที่ช่องหมายเลขที่เป็นคำตอบของคำถามแต่ละข้อ โดย 1 = ไม่สำคัญเลย 2 = ไม่สำคัญ
3 = ไม่อยู่ในการพิจารณา 4 = สำคัญ 5 = สำคัญมาก]

ปัจจัยที่มีผลต่อการตัดสินใจ	1	2	3	4	5
ทัศนคติของผู้บริหารระดับสูงต่อการนำเทคโนโลยีมาใช้					
ความรู้ด้านบัญชีของผู้บริหารมีจำกัด					
ความก้าวหน้าด้านเทคโนโลยีของผู้บริหารระดับสูง					
ผู้บริหารขาดการสร้างสรรค์ด้านเทคโนโลยี					
ขาดแคลนเงินในการลงทุนด้านการนำเทคโนโลยีมาใช้					
ขาดแคลนบุคลากรที่มีทักษะด้านเทคโนโลยีและในการประยุกต์ใช้ เทคโนโลยี					
ขาดแคลนเงินทุนที่จะจัดจ้างบุคลากรด้าน ไอทีที่เหมาะสม					
ความเหมาะสมเรื่องเวลาที่มีกับการนำเทคโนโลยีมาใช้					
วัฒนธรรมของบริษัทที่มีต่อการนำเทคโนโลยีมาใช้					
ความเหมาะสมของที่ตั้งของบริษัทที่จะนำเทคโนโลยีมาใช้					
เทคโนโลยีไม่เหมาะสมหรือสอดคล้องกับลักษณะการดำเนินงานของบริษัท					
ขนาดของบริษัทไม่เหมาะสมกับการใช้ เทคโนโลยี					
คุณภาพของข้อมูล ไม่เหมาะสมที่จะนำเทคโนโลยีมาใช้ในการประมวลผล					
บริษัทมีความกังวลในเรื่องของความปลอดภัยของข้อมูลที่เกิดจากการใช้เทคโนโลยี					
บริษัทขาดแคลนข้อมูลด้านเทคโนโลยี					
โปรแกรมทางด้านเทคโนโลยีมีต้นทุนสูง					

ส่วนที่ 3 วิธีปฏิบัติด้านการจัดการความเสี่ยงที่บริษัทของท่านนำมาใช้ในระบบสารสนเทศทางบัญชี

15. ท่านดำเนินการจัดการกับระบบควบคุมภายในของบริษัทเพื่อลดความเสี่ยงที่เกิดจากระบบสารสนเทศบัญชีอย่างไร

[กรุณาใส่เครื่องหมาย X ที่ช่องหมายเลขที่เป็นคำตอบของคำถามแต่ละข้อ โดย 1 = ไม่สำคัญเลย 2 = ไม่สำคัญ 3 = ไม่อยู่ในการพิจารณา 4 = สำคัญ 5 = สำคัญมาก]

	1	2	3	4	5
ใช้การจัดการกับความเสี่ยง ซึ่งเป็นเรื่องที่บริษัทพิจารณาก่อนสิ่งอื่นใด					
ใช้การจัดการกับความเสี่ยง ซึ่งให้อยู่ในความรับผิดชอบของพนักงานทุกคนในบริษัท					
ใช้กรอบการจัดการความเสี่ยงแบบERM (Enterprise Risk Management)					
ใช้หลักการประเมินผลการดำเนินงานของพนักงานเป็นส่วนหนึ่งของการควบคุมภายในของบริษัท					
ใช้วิธีการอธิบายให้พนักงานทุกคนในบริษัทรับรู้ถึง เป้าหมายขององค์กร กิจกรรมการจัดการความเสี่ยง					
ใช้ระบบฝึกอบรมและชี้แนะพนักงานทุกคนของบริษัทให้เข้าใจอย่างทอ่งแท้ในเนื้อหาของพนักงานแต่ละคนที่เขาต้องรับผิดชอบ					
มีระบบการอนุมัติต่างๆ ที่เหมาะสมและปลอดภัยใช้ในบริษัท					
มีการทบทวนและการทำให้ได้รับการยอมรับ ในการดำเนินธุรกิจเป็นประจำ					
ฝ่ายบริหารมีการออกแบบและยกระดับการรับรู้ขององค์กรในแผนฟื้นฟูธุรกิจของบริษัท					
ใช้ระบบสำรองข้อมูลเพื่อป้องกันระบบข้อมูลล่มเหลว					
มีการตรวจสอบและการประเมินผลการจัดการความเสี่ยงเป็นประจำ					
มีนโยบายการปรับปรุงและพัฒนาอย่างต่อเนื่อง					
ใช้ระบบการแบ่งแยกการปฏิบัติงานตามแต่ละสายงาน เพื่อลดการเกิดความเสี่ยง					
มีการตรวจสอบประสิทธิภาพของระบบการจัดการความเสี่ยงเป็นระยะๆ ตามที่บริษัทกำหนด					
มีความชัดเจนของการกำหนดนโยบายของบริษัท และวิธีการที่ใช้ในการจัดการความเสี่ยงของบริษัท					
มีการตรวจสอบประสิทธิภาพของระบบการควบคุมภายในเป็นประจำ					
มีการออกแบบระบบข้อมูลสารสนเทศที่ดีเป็นสิ่งจำเป็นสำหรับระบบการประเมินผลทางการเงิน					
การมอบอำนาจในการควบคุมความเสี่ยงให้ชัดเจนเป็นลายลักษณ์อักษร					
การมีนโยบายการบริหารความเสี่ยงที่ชัดเจน เช่นด้านเทคโนโลยี , หนี้สิน ฯลฯ					
การมีผู้เชี่ยวชาญและหน่วยฝึกอบรมความเสี่ยงให้กับพนักงานหรือผู้รับผิดชอบเกิดความเข้าใจ					
การมีเครื่องมือสนับสนุนและอำนวยความสะดวกในการบริหารความเสี่ยงยามฉุกเฉิน					
การใช้ดุลพินิจที่สอดคล้องกันของผู้บริหารแต่ละระดับในองค์กร					
การโอนความเสี่ยงที่รุนแรงที่องค์กรไม่สามารถจะลงทุนป้องกันเองได้ ให้หน่วยงานอื่นรับผิดชอบแทน					
มีหน่วยงานตรวจสอบภายในเพื่อสอบทานและประเมินความเสี่ยงและประสิทธิภาพของระบบควบคุมภายในองค์กร					

ส่วนที่ 4: ระบบสารสนเทศทางบัญชีมีส่วนช่วยในการตัดสินใจของธุรกิจอย่างไร

[กรุณาใส่เครื่องหมาย X ที่ช่องหมายเลขที่เป็นคำตอบของคำถามแต่ละข้อ โดย 1 = ไม่มีประสิทธิภาพอย่างมาก

2 = ไม่มีประสิทธิภาพ 3 = ไม่อยู่ในการพิจารณา 4 = มีประสิทธิภาพ 5 = มีประสิทธิภาพมาก]

16. ท่านมีความเชื่อมั่นในประสิทธิภาพของระบบสารสนเทศทางบัญชีของท่านอย่างไรในการจัดเตรียมข้อมูลเพื่อใช้ในการตัดสินใจทางการเงิน)Financial decision making)

	1	2	3	4	5
เพื่อใช้ในการประเมินผลกำไรและศักยภาพในการทำกำไรของบริษัท					
เพื่อใช้ในการประเมินคุณภาพของสินค้าหรือบริการของบริษัท					
เพื่อใช้ในการประเมินต้นทุนการจ้างพนักงานของบริษัท					
เพื่อใช้ในการสร้างทางเลือกสินค้าให้หลากหลาย และการเลือกสินค้าแบบผสมผสาน					
เพื่อใช้ในการกำหนดต้นทุนของสินค้า และการตัดสินใจ					
เพื่อใช้สนับสนุนการผสมผสานยุทธศาสตร์ทางธุรกิจและแหล่งข้อมูล					
เพื่อใช้ในการประเมินผลตอบแทนจากการลงทุนสินทรัพย์ของบริษัท					
เพื่อใช้ประเมินการเจริญเติบโตของยอดขายสินค้าของบริษัท					
เพื่อใช้ในการประเมินผลการดำเนินงานทางการเงินทั้งหมดของบริษัท					
เพื่อให้นำเสนอข้อมูลเพื่อใช้พัฒนาความเข้าใจของข้อมูลที่ประมวลได้					
เพื่อให้นำเสนอข้อมูลในอันที่จะปรับปรุงความกระชับและความชัดเจน					
เพื่อให้ข้อมูลที่ได้มีความน่าเชื่อถือและมีความโปร่งใส					
เพื่อให้ได้ข้อมูลที่ต้องการเสร็จตามเวลาที่กำหนด					
เพื่อใช้ในการเพิ่มศักยภาพในการจัดเตรียมทำรายงานเพื่อใช้ในการตัดสินใจ					

17. ท่านมีความเชื่อมั่นในประสิทธิภาพของระบบสารสนเทศทางบัญชีของธุรกิจท่านอย่างไร เมื่อเปรียบเทียบกับคู่แข่งทางธุรกิจของท่าน

	1	2	3	4	5
เพื่อใช้ในการประเมินผลกำไรและศักยภาพในการทำกำไรของบริษัท					
เพื่อใช้ในการประเมินคุณภาพของสินค้าหรือบริการของบริษัท					
เพื่อใช้ในการประเมินต้นทุนการจ้างพนักงานของบริษัท					
เพื่อใช้ในการสร้างทางเลือกสินค้าให้หลากหลาย และการเลือกสินค้าแบบผสมผสาน					
เพื่อใช้ในการกำหนดต้นทุนของสินค้า และการตัดสินใจ					
สนับสนุนการผสมผสานยุทธศาสตร์ทางธุรกิจและแหล่งข้อมูล					
เพื่อใช้ในการประเมินผลตอบแทนจากการลงทุนสินทรัพย์ของบริษัท					
เพื่อใช้ประเมินการเจริญเติบโตของการขายสินค้าของบริษัท					
เพื่อใช้ในการประเมินผลการดำเนินงานทางการเงินทั้งหมดของบริษัท					
เพื่อนำเสนอข้อมูลเพื่อใช้พัฒนาความเข้าใจของข้อมูลที่ประมวลได้					
เพื่อนำเสนอข้อมูลในอินเทอร์เน็ตที่ปรับปรุงความกระชับและความชัดเจน					
เพื่อให้ข้อมูลที่ได้มีความน่าเชื่อถือและมีความโปร่งใส					
เพื่อให้ได้ข้อมูลที่ต้องการเสร็จตามเวลาที่กำหนด					
เพื่อใช้ในการเพิ่มศักยภาพในการจัดเตรียมทำรายงานเพื่อใช้ในการตัดสินใจ					

**ขอขอบพระคุณท่านผู้ตอบแบบสอบถามทุกท่านที่เสียสละเวลาอันมีค่าของท่าน ในการตอบข้อซักถามของ
แบบสอบถามชุดนี้**

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การเสริมสร้างศักยภาพการควบคุมภายในและการบริหารความเสี่ยงของระบบสารสนเทศทางบัญชี

กรณีศึกษารูธุรกิจขนาดกลางและขนาดย่อม (SMEs) ของประเทศไทย

(ระยะที่ 2: การสัมภาษณ์)

ระยะที่ 1: คัดเลือกผู้ถูกสัมภาษณ์

กล่าวทักทายผู้ถูกสัมภาษณ์ กล่าวขอบคุณสำหรับการให้สัมภาษณ์ในครั้งนี้ ซึ่งแจ้งวัตถุประสงค์ของการสัมภาษณ์ และอธิบายขั้นตอนของการสัมภาษณ์ แจ้งผู้ถูกสัมภาษณ์ว่าจะใช้ระยะเวลาในการสัมภาษณ์ประมาณ ครึ่งชั่วโมง และขออนุญาตในการใช้เครื่องบันทึกเสียงระหว่างการสัมภาษณ์

ระยะที่ 2: การเริ่มการสัมภาษณ์

ถ้ามีอนุญาตให้บันทึกเทปจากผู้ถูกสัมภาษณ์ เริ่มเปิดเครื่องบันทึกเทป

ระยะที่ 3: การสรุปของการสัมภาษณ์

กล่าวขอบคุณผู้ให้สัมภาษณ์ สอบถามกรณีผู้ให้สัมภาษณ์ต้องการสำเนาของการให้สัมภาษณ์ซึ่งจะถูกถอดเทป ในช่วงอาทิตย์ถัดไปและ จะส่งให้ผู้ถูกสัมภาษณ์ทางอีเมล ผู้ให้สัมภาษณ์สามารถเพิ่มเติม ลบ หรือแก้ไขข้อมูลในเอกสารนั้นได้และส่งกลับมายังผู้ทำวิจัย

ขั้นตอนการแนะนำ

สวัสดีค่ะ ดิฉันชื่อ บังอร สวัสดิ์สุข ปัจจุบันกำลังศึกษาในระดับปริญญาเอก สาขาวิชาการบัญชี ที่มหาวิทยาลัย University of Tasmania ภายใต้การดูแลและให้คำปรึกษาของ Associate Professor Dr Trevor Wilmshurst ดิฉันกำลังทำวิจัยในหัวข้อเรื่อง การเสริมสร้างศักยภาพการควบคุมภายในและการบริหารความเสี่ยงของระบบสารสนเทศทางบัญชี กรณีศึกษารูธุรกิจขนาดกลางและขนาดย่อม (SMEs) ของประเทศไทย โดยมีวัตถุประสงค์ที่จะประเมินสถานะปัจจุบันและผลสำเร็จของการนำระบบสารสนเทศบัญชีมาใช้ในบริษัทที่เชื่อมกับระบบควบคุมภายใน เทคโนโลยี และการบริหารความเสี่ยง และเพื่อตรวจสอบว่าเทคโนโลยีภายในระบบสารสนเทศบัญชีสามารถนำมาใช้เพื่อพัฒนาระบบควบคุมภายในและจัดการความเสี่ยงได้อย่างไร ผลประโยชน์ที่จะได้รับจากการทำวิจัยในครั้งนี้ จะมีส่วนช่วยให้ธุรกิจขนาดกลางและขนาดย่อมของประเทศไทย มีความสามารถในการดำเนินกิจการอย่างมีประสิทธิภาพและประสิทธิผลมากยิ่งขึ้น มีศักยภาพเพียงพอที่จะร่วมลงแข่งขันด้านการค้าในตลาดโลก สามารถตอบสนองความต้องการของผู้ที่เกี่ยวข้องทั้งภายในและ

ภายนอกกิจการได้ และสามารถเสริมสร้างความเข้าใจที่ชัดเจนยิ่งขึ้นเกี่ยวกับระบบการควบคุมภายในและการบริหารความเสี่ยงภายในระบบสารสนเทศทางบัญชีของธุรกิจขนาดกลางและขนาดย่อมของประเทศไทย

วัตถุประสงค์ของการสัมภาษณ์ในครั้งนี้เพื่อค้นหาความคิดเห็นเพิ่มเติม เกี่ยวกับระบบสารสนเทศทางบัญชี การจัดการความเสี่ยงที่ใช้ในระบบสารสนเทศทางบัญชี

ดิฉันขอยืนยันว่า การเก็บข้อมูลจากการสัมภาษณ์ในครั้งนี้ ระหว่าง กลุ่มที่จดทะเบียนในตลาดหลักทรัพย์ เอ็มเอไอ และ กลุ่มทั่วไป และข้อมูลส่วนบุคคลต่างๆ จะถูกเก็บไว้เป็นความลับ

ส่วนที่ 1: รายละเอียดของผู้ถูกสัมภาษณ์

ชื่อ-สกุล : _____

ตำแหน่ง _____

หน่วยงาน _____

ที่อยู่ของหน่วยงาน _____

วันที่สัมภาษณ์ _____

คำถามเหล่านี้อยู่ในรูปของบทสัมภาษณ์แบบกึ่งมีโครงสร้าง

ส่วนที่ 2: คำถามของบทสัมภาษณ์

1. องค์กรของท่านมีการจัดการระบบสารสนเทศทางบัญชีอย่างไร
2. เหตุผลที่ท่านใช้วิธีตามคำถาม 1 ในการจัดการกับระบบสารสนเทศทางบัญชีขององค์กรของท่าน
3. เทคโนโลยีมีบทบาทกับระบบสารสนเทศทางบัญชีของท่านอย่างไรบ้าง
4. เทคโนโลยีมีผลกระทบต่อความสามารถในการตัดสินใจทางการเงินขององค์กรท่านอย่างไรบ้าง
5. องค์กรของท่านมีวิธีการจัดการความเสี่ยงอย่างไรบ้าง
6. องค์กรของท่านมีวิธีการจัดการความเสี่ยงเฉพาะที่เกี่ยวข้องโดยตรงกับระบบสารสนเทศทางบัญชี
7. องค์กรของท่านมีการจัดการระบบควบคุมภายในเพื่อลดการเกิดความเสี่ยงกับระบบสารสนเทศทางบัญชีอย่างไร
8. ท่านมีความเชื่อมั่นในประสิทธิภาพของระบบสารสนเทศทางบัญชีในด้านการตัดสินใจทางการเงินอย่างไรบ้าง เมื่อเปรียบเทียบกับคู่แข่งทางธุรกิจ