

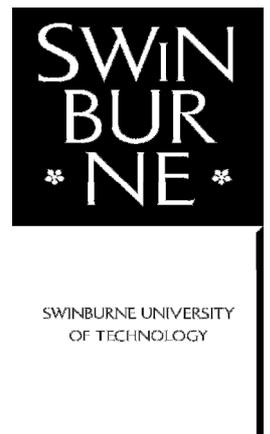
“Accounting Reform in the Public Sector: A Case of Thai Public Universities”

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Abstract

This research presents a contribution to the government accounting change literature by highlighting financial reform in public sector agencies in a developing country. The purpose of this study is to investigate factors influencing and affecting accounting reform in Thai public universities. Drivers for change, both internal and external, barriers to change and facilitators of change are highlighted in this study.

The original models of accounting change in both the public and private sectors were based on contingency theory. The models focus on both the external and internal factors affecting the change process in order to understand the stimuli and factors influencing the implementation of accounting change. This current study applied an adapted model to understand accounting reform in the public universities in the Thai context.

A quantitative research method was used, together with a review of prior literature and government reports. The quantitative data was collected through a mail survey to the Chief Financial Officer of all 78 Thai public universities and 63 Chief Financial Officers responded, which constitutes an 81% response rate.

The results of this study indicate that the majority of Thai public universities are implementing changes to both the financial and management accounting systems. The focus at present is on changes which include: the adoption of accrual accounting practices; adapting the budgeting system to suit block grant funding; and implementing cost control. The main stimuli for change in the universities have come from both external pressures and internal pressures. After the 1997 Thai economic crisis the Thai government introduced financial reforms including the need for all public agencies to adapt their accounting practices in line with New Public Management (NPM). Secondly, in 2001 the government enacted a Royal Decree to require output costing for all public agencies. Coupled with this was the push for public universities to transition to autonomous public universities to enable self-management of university activities in an environment of reduced government funding.

The changing nature of the university sector, with many universities moving to autonomous status, and the need for all universities to be more accountable, has led to

the need for more relevant information for financial management. Due to a lack of costing information and the lack of a systematic accounting system to record and thereby control revenue and expenditure in Thai public universities, University management require improve information for planning and control purposes.

With support from both government and university management 31 universities have either implemented or are in the process of implementing Activity Based-Costing (ABC). Respondents identified that the major benefits gained by their university adopting ABC is the ability to meet the government requirements for unit costing and the provision of improved cost information for internal decision making. However, the finding shows that the perceived actual benefit of ABC was slightly lower than the expected benefit. The likely reason for this is the lack of understanding of the change process and the time and resources necessary to fully implement ABC. Problems identified during the ABC implementation were: lack of necessary resources, such as an appropriate software package; difficulty in gathering data on cost drivers; and non-completion of the cash to accrual accounting project. Training was identified as key for knowledge transfer to enable staff to understand the requirements to implement the changes; however the lack of full-time staff has slowed the pace of change.

Overall, the findings suggest that in a developing country before change occurs those involved in the change process must be fully trained to understand what is required and be given the knowledge and skills to fulfil their responsibilities. The findings may be helpful to those who are involved in accounting reform in the public sector as this study provides further insight into the introduction of NPM practices in a developing country.

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Declaration

This thesis:

- Contains no material which has been accepted for the award to the candidate of any other degree or diploma, except where due reference is made in the text of the examinable outcome;
- To the best of the candidate's knowledge contains no material previously published or written by another person except where due reference is made in the text of the examinable outcome;
- Where the work is based on joint research or publications, discloses the relative contributions of the respective workers or authors; and
- Has met all the requirements of the Ethics Approval from the Swinburne University of Technology under SUHREC Project 2009/202.

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List of Abbreviations

AA	Activity Analysis
ABB	Activity-Based Budgeting
ABC	Activity-Based Costing
ACA	Activity Cost Analysis
ADB	Asian Development Bank
AMP	Activity Management Practice
AMOS	Analysis of Moment Structures
ANOVA	Analysis of Variance
BAR	Barriers
BOB	Bureau of Budget
BSC	Balanced Scorecard
CFA	Confirmatory Factor Analysis
CFO	Chief Finance Officers
CGD	The Comptroller General's Department
CIGAR	Comparative International Governmental Accounting Research
EF	External Factors
EFA	Exploratory Factors Analysis
FAC	Facilitators
GFMIS	Government Financial Management Information System
GG	Good Governance
IAS	International Accounting Standards
IF	Internal Factors
IMF	International Monetary Fund
ISO	International Organisation for Standardisation
IPSAS	International Public Sector Accounting Standard
IT	Information System
KMO	The Kaiser-Myer-Oklin
KPI	Key Performance Indicator
N	Population
n	Sample Size
NPM	New Public Management

Chapter 1

Introduction

1.1 Chapter Overview

The research presented in this dissertation aims to increase the understanding of accounting reform in the public sector in line with new public management (NPM). It explores factors influencing accounting change in the Thai public sector, with a focus on public universities. This chapter sets the context for the study, and presents the general background of the study, the purpose of the research, as well as the significance scope of this research. The chapter concludes with an overview of the overall structure of the thesis.

1.2 The Background of the Thesis

In recent years increasing levels of global competition have led to the need for improved accounting information for decision making in business (Hoque 2005; Burns, Ezzamel & Scapens 1999; Waweru, Hoque & Uliana 2004). A number of studies suggest that change in the business environment is a reason for changes in organisations, which in turn causes changes in accounting practices (Cao, Clarke & Lehaney 2003; Hoque 2005; Scapens 1994). The key theme of the introduction of new accounting practices is to increase efficiency and effectiveness in an attempt to improve the overall performance and accountability of an organisation (Boston 2001; Baird 2007; Clarke & Lapsley 2004; Hood 1995; Hoque 2005).

In the public sector, accounting reform has affected almost all public agencies and has led to instruments of new public management (Arnaboldi & Azzone 2008; Chang 2006; Hassan 2005, Nyland & Pettersen 2004; Hood 1995). Financial accounting techniques such as accrual accounting were considered essential to support NPM and lead to an increase in the efficiency and effectiveness in an attempt to improve the overall performance and accountability of the public sector (Boston 2001; Hood 1995; Lapsley & Wright 2004; Lye, Perera & Rahman 2005). The accrual accounting model makes it

possible to assess performance measurement in items such as the total costs of government activities and service (Venieris & Cohen, 2004; Tudor & Blidesel 2008). Studies have focused on financial management reform in public sector agencies such as hospitals (Nyland & Pettersen 2004), post offices, police forces, local governments (Lapsley & Wright 2004; Lapsley & Pallot 2000; Jackson & Lapsley 2003; Yamamoto 1999) and also universities (Christiaens & Wielemaker 2003; Venieris & Cohen 2004). These studies help to understand why and how accounting reform was undertaken in different agencies of the public sector when faced with a need for change. Many developed and developing countries have introduced new accounting practices to support change in the operating environment (Anderson & Lanen 1999; Chenhall & Langfield-Smith 1998; Gurd & Thorne 2003; Phadoongsitthi 2003; Pettersen 2001; Sulaiman, Ahmad & Alwi 2004; Waweru, Hoque & Uliana 2004; Yamamoto 1999). However, the question arises as to how organisations have changed their accounting practices and what factors have either enabled or inhibited the change process. Several studies have researched the adoption of new accounting practices to support organisational change in both the private and public sector in developed countries (Luder 1992; Innes & Mitchell 1990; Anderson & Lanen 1999; Chenhall & Langfield-Smith 1998; Gurd & Thorne 2003; Pettersen 2001; Sulaiman, Ahmad & Alwi 2004; Yamamoto 1999). There have been a few studies that have investigated the adoption of new accounting practices in the public sector in Asian developing countries (Atreya & Armstrong 2002; Marwata & Alam 2006; Olorilanto 2008; Saleh & Pendlebury 2006; Van De Ven & Poole 1995).

Luder (1992) developed a contingency model to research accounting change in the public sector. The model focuses on both the external and internal factors affecting the change process in order to understand the stimuli and factors influencing the implementation of government accounting reform. It also provides a framework to measure the success or failure of accounting reform. Luder's change model has been used and adapted by many researchers. Godfrey, Devlin & Merrouche (1996) modified Luder's model by highlighting factors influencing accounting change in developing countries, especially the demands of international funding agencies. Yamamoto (1999) focused on factors that influence specific types of accounting change. Christensen (2002) stresses the importance of key actors of accounting change. Additionally, this study has also incorporated the accounting change model in the private sector developed

by Innes & Mitchell (1990), adapted by Cobb, Helliard & Innes (1995) and extended by Kasurinen (2002). Innes & Mitchell (1990) stress three types of factors to explain the causes of accounting change that they refer to as motivators, catalysts and facilitators. Cobb, Helliard & Innes (1995) emphasized the role of individuals as leaders in the change process. Kasurinen (2002) focused on the barriers to change by dividing the barriers into three subcategories: confusers, frustrators and delayers. From this literature a contingency model was developed for this current study to examine accounting change, focusing on the stimuli, barriers and facilitators, in Thai public universities.

1.3 The Purpose of the Thesis

The main purpose of the research is to investigate the process of accounting change in Thailand's public universities. It investigates factors influencing and affecting the process of change. Further, this research aims to explore both financial and management accounting change with a focus on cost techniques. The research presented in this thesis focuses on the following key research questions:

1. What factors influence accounting change in Thai public universities?
2. What are the major factors that have affected the success of the accounting change in Thai public universities?
 - 2.1 What factors can be barriers to the success of accounting change in Thai public universities?
 - 2.2 What factors act as facilitators to the success of accounting change in Thai public universities?
3. What new accounting systems and techniques have been adopted by Thai public universities?
4. What are the factors that influence and affect the use of ABC in Thai public Universities?
5. Are there any university characteristics that may cause differences in the adoption of new accounting practices?

In addition, this research aims to develop and expand both the theory and the models used in discussing factors influencing accounting change in the public sector focusing on developing countries.

1.4 The Significance of the Thesis

Corporate governance reforms in Thailand were prompted by factors relating to the 1997 Asian economic crisis and the structural weakness in the Thai economic system (Trairatvorakul 1998). As a condition for funding the international funding agencies required the Thai government to reform the public sector in line with the principles of good governance to ensure accountability to stakeholders and to improve the transparency and disclosure of accurate and comprehensive information (Bowornwathana 1997; Mongkol 2007; Trairatvorakul 1998). In response, the Thai government promulgated the 1997 Constitution which supported the development of a governance paradigm in both the public and private sectors (Bowornwathana 2000). Consequently, the public sector is now run and organized under the principles of the governance paradigm following the new performance standards of civil polity, in that the government must be effectively accountable, open, and transparent. Civil polity is especially concerned with the issue of fairness in public services and the adherence to the new international codes of behavior and ethics (Bowornwathana 1997). Further in 2003, the Thaksin government promulgated the Royal Decree on Good Governance, to promote good corporate governance practice with four underlying principles: accountability, public participation, information disclosure and performance monitoring and evaluation (Painter 2006).

Therefore, in the public sector, corporate governance is “basically concerned with structures and processes for decision-making and the controls and behaviour that support effective accountability for performance outcomes” (Barret 1998). NPM principles have been adopted to satisfy these requirements and are viewed as a component of good governance which should lead to improved organisational performance in the public sector (Bowornwathana 2000; Mimba, Helden & Tillema 2007; Tambulasi 2007). The adoption of a NPM focused reform has led to a change in management practices of the public sector towards more private sector practices, and with accountability focusing on results rather than processes (Hood 1995; Francesco 2001; Painter 2006). NPM introduces a new imperative for efficiency and transparency into all elements of the public sector (Atreya & Armstrong, 2002; Baird 2007; Mimba, Helden & Tillema 2007). NPM encourages improved measurement of costs and revenues; more efficient and effective use of resources; and improved measurement of

financial performance (Venieris & Cohen 2004; Baird 2007; Tambulasi 2007; Mimba, Helden & Tillema 2007).

Another important event influencing the accounting change was the promulgation of Royal Decree Section 21 which required all public agencies to provide information on service costs with the objective of improving the transparency and accountability of the government to the citizens. The disclosure of service costs would allow the citizens to assess whether the resources used by public agencies represented value for money.

Therefore, an important reform in line with NPM is seen in the adoption of private sector practices in the financial management of government. This involves a process of accounting change whereby new accounting techniques and practices are adopted in financial accounting, management accounting and/or auditing (Cobb, Helliard & Innes 1995; Hopwood 1990; Innes & Mitchell 1990; Lapsley & Wright 2003; Luder 1992). Such changes can include: cash to accrual accounting; line item budget allocations to grant funding; performance evaluation based on both financial and non-financial information; and introduction of output costing (Baird 2007; Clarke & Lapsley 2004; Cohen, Kaimenaki & Zorgios 2007; Venieris & Cohen 2004; Yamamoto 1999).

Financial accounting reform plays a central role in NPM (Baird 2007; Clarke & Lapsley 2004; Cohen Kaimenaki & Zorgios 2007; Venieris & Cohen 2004; Yamamoto 1999). Financial accounting techniques, such as accrual accounting, are considered essential to improve the overall performance and accountability of the public sector (Boston 1987; Hood 1995; Lapsley & Wright 2004; Lye, Perera & Rahman 2005). Management accounting techniques are also needed to provide advanced accounting information to support NPM reforms. Management accounting practice based on NPM has been seen to increase managerial control, decrease the influence of political power and improve efficiency, effectiveness, economic, accountability, and transparency of the public sector (Tambulasi 2007; Mimba, Helden & Tillema 2007). Public reform needs modern management accounting techniques such as activity based-costing (ABC) (Brawn, Booth & Giacobbe 2004; Braid, Harrison & Reeve 2006; Baird 2007), the balanced scorecard (BSC), and key performance indicators (KPIs) (Kasurinen 2000; Waweru, Hoque & Uliana 2004). Such techniques enable better control over resources in the public system and provide the knowledge to adapt to the rapidly changing

organisational and social environment (Jackson & Lapsley 2003; Lapsley & Wright 2004; Tambulasi 2007).

There have been a number of studies investigating NPM and financial management reform in North America, Europe, U.K., Scandinavia, Australia and New Zealand (Brignal & Modell 2000; Clarke & Lapsley 2004; Christensen 2002; Hood 1999; Jackson & Lapsley 2003; Lapsley & Wright 2004; Mimba, Helden & Tillema 2007). However, only a few studies have focused on accounting reform in line with NPM in developing countries (Atreya & Armstrong 2002; Marwata & Alam 2006; Oliorilanto 2008; Saleh & Pendlebury 2006).

This research adds to the literature by focusing on financial management reform, with a focus on accounting practices, in the environment of (NPM) in a developing country, Thailand. There is little evidence in both domestic and international literature about accounting reform in developing countries, in particular Thailand (De Vries & Pholbud 2002; Office of the Education Council 2004). This study attempts to fill a gap in the literature by reviewing accounting change in the Thai public sector with a focus on Thai public universities. Thai public universities were seen as an interesting research focus as public universities also have the option of transforming into autonomous universities (Kiritikarn 2004). As part of this transformation process, it is necessary for the universities to improve the budgeting and accounting systems to assist in achieving better financial performance in an environment of reduced government funding (Kiritikarn 2003; Verheul 2002).

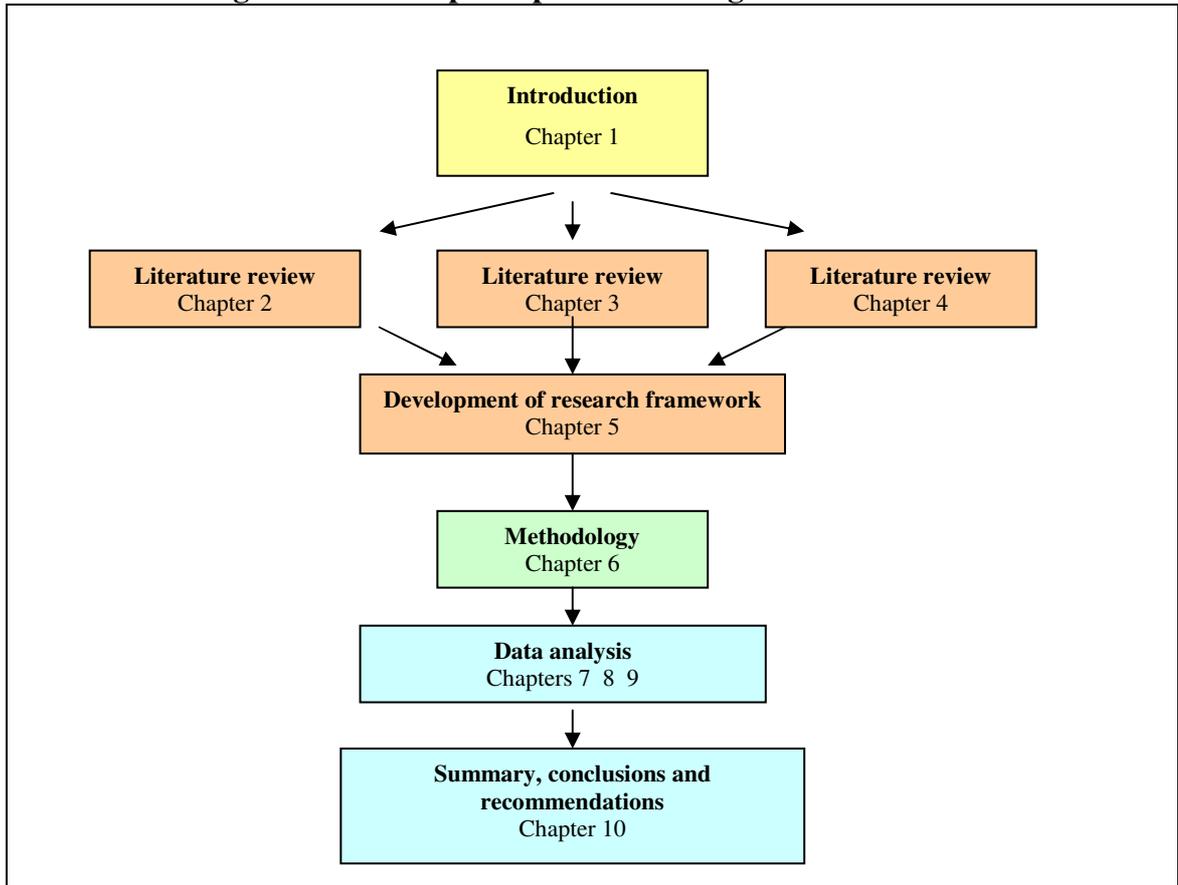
1.5 The Scope of the Thesis

The research is an investigation of factors influencing accounting change in the Thai public sector with a focus on the Thai public universities. The first focus is a study that explores the main factors that influence and effect accounting reform in Thai public universities. The second focus is an investigation of the factors influencing the selection of accounting techniques. The last focus is a comparison of whether different characteristics of Thai public universities affect accounting change.

1.6 An Overview the Structure of the Thesis

The thesis consists of ten chapters (including this introductory chapter); an overview of the remaining chapters follow, and a concept map summarizing the thesis structure is shown in Figure 1.1.

Figure 1.1: Concept Map Summarizing Thesis Structure



According to the discussion above, the six steps of this thesis consists of ten chapters as follows:

Chapter 1: Introduction – in this chapter provides a brief introduction to the research background along with the purpose of the research, the significance of the research and the scope of the research. It also outlines the structure of the thesis.

Chapter 2: Reform in the Thai Public Sector – in this chapter a literature review is given of the Thai public sector reform with a focus on Thai Education reform, together with the background to accounting reform in Thai public universities.

Chapter 3: Corporate Governance and New Public Management - in this chapter the link between corporate governance and new public management (NPM) is explored. The chapter also provides a discussion of factors influencing accounting change in the public sector.

Chapter 4: Accounting and Organisation Change– an examination of the literature on accounting change and its role in organisational change is discussed in this chapter. It also explores the development of accounting change models in both the public sector and private sector.

Chapter 5: A Theoretical Framework for Accounting Change – in this chapter the research framework to guide this study is discussed. The research framework is constructed based on the literature review outlined in chapters 2 – 4.

Chapter 6: Research Methodology – in this chapter the research methodology is outlined. Discussion will focus on sample selection, the data collection method, questionnaire development and the statistical tests to be used in the data analysis phase.

Chapter 7: Result and Findings I – in this chapter the first analysis of the research findings are discussed. The descriptive analysis includes the respondent characteristics and the primary analysis of the data collected. The statistical analysis includes descriptive analyses, chi-square, cross tabulation, t-test and analysis of variance (ANOVA).

Chapter 8: Further Analysis of Findings II – to further explore the findings this chapter will focus on the analysis of the different characteristics of Thai public universities and whether these have had any impact on accounting reform. Analysis of variance (ANOVA) has been used to access the issue. ANOVA is used to test if there are any differences between the characteristics of the universities on accounting reform. Also a comparison will be made between those universities that have deemed the change as either successful or unsuccessful to identify whether there are any factors which differentiate the universities.

Chapter 9: Further Analysis of Finding II Exploratory Factors Analysis – in this chapter further discussion is given of the research findings after applying Exploratory Factor Analysis (EFA). EFA technique shows the grouping variables into a smaller subset which can explain factors influencing and affecting accounting change in Thai public universities.

Chapter 10: Conclusion – in this final chapter conclusions and implications of the doctoral research are presented. There is an overview of the research, as well as its main objective, theoretical framework and research methodology. A summary of the major findings is also given. The contribution and implications of the research, the discussion of the limitations, and the recommendations for future research are also included.

1.7 The Definition of Key Terms

This section defines the key terms to develop an understanding of the concept and terminology used throughout the thesis. According to Chan, Jones & Luder (1996) governmental accounting innovation is about the development of something new or different and every change is called “reform”. Additionally, the definition of accounting innovation by the Comparative International Governmental Accounting Research (CIGAR) is “*a more informative public sector accounting system*”. Thus, the introduction of government accounting innovation and reform can be seen in the change of accounting techniques used in the public sector. Government accounting innovations are expected to provide more and improved financial information for government (Chan, Jones & Luder 1996).

A definition of the key terms used in this study follows:

1.7.1 Accounting Change refers to the development of new accounting techniques and practices in financial accounting, management accounting and auditing.

1.7.2 Accounting Technique refers to techniques which support accounting change such as accrual-based accounting, activity-based costing and balanced scorecard.

1.7.3 Activity Based Costing (ABC) refers to a cost technique that assigns indirect costs to the specific activities performed in a service delivery process. The activity costs are then assigned to specific cost objects e.g. faculties, departments, students.

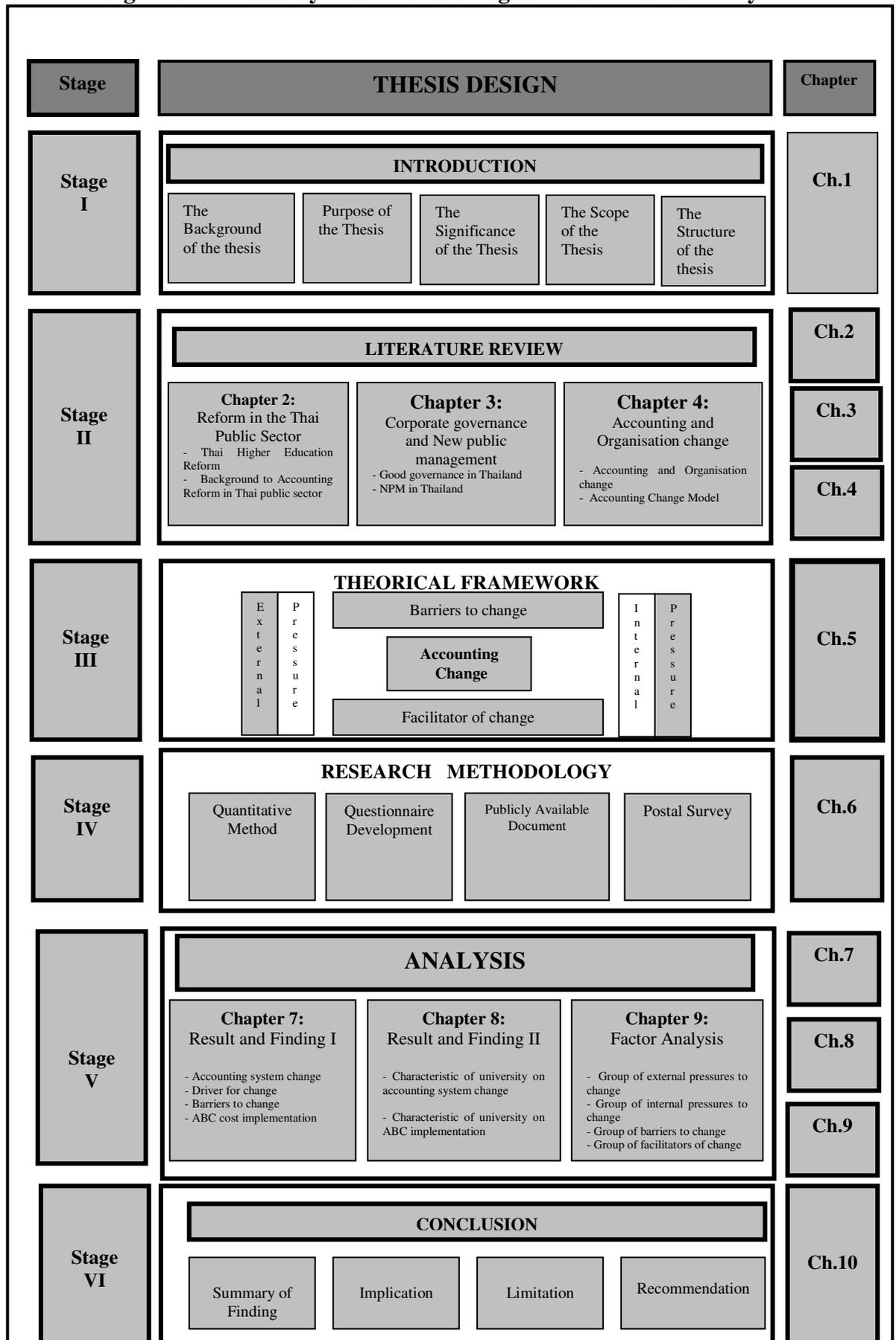
1.7.4 New Public Management (NPM) refers to the management of the public sector by government with the introduction of private management style and market-orientation. The NPM practice can be seen in the decentralization of management, commercialisation, privatisation, outsourcing and downsizing.

1.7.5 Corporate Governance refers to how an organisation is controlled and how it conducts itself and has led to the need for organisations to change and to improve its management practices to improve accountability, transparency and fairness in the management of the organisations.

1.8 Chapter Summary

This chapter presents the research background for this study, together with the purpose of the study and the primary research questions. The significance and scope of the study are described, prior to presenting an overview of structure of the thesis. The overview of the structure of the thesis relating to accounting change is presented in six steps of the research design: introduction to background of the study, literature review, research framework, research methodology, data analysis and conclusions. Figure 1.2 provides a more detailed summary of the research design for this current study. The next chapter introduces accounting and education reform in Thailand.

Figure 1.2: Summary of Research Design for this Current Study



Chapter 2

Reform in the Thai Public Sector

2.1 Introduction

This chapter reviews the literature relating to both structural and accounting reform in the Thai public sector with a focus on Thai public universities. In line with New Public Management (NPM) Thai public universities have introduced financial management reform programs in order to improve efficiency and effectiveness of performance. Accounting reform is viewed as an important step in providing the up to date information needed for better decision making.

2.2 Accounting Reform in Thailand

After the 1997 economic crisis, the Thai government faced an increasing need for improved financial information for planning and economic recovery (Henry & Attavitkamtorn 1999). Traditionally the Thai government has used a manual cash based accounting and budgetary system (Office of the Comptroller General's Department 2006). However, there was a need for the Thai government to improve its accounting information system to meet its objectives of transparency, accountability and value for money. Therefore, NPM and financial management reform was a new initiative adopted for the Thai public sector. In line with NPM practices the financial reform included a move from the traditional budget and cash based accounting system towards accrual based accounting in the hope that it would provide higher quality information (Office of the Comptroller General's Department 2006).

In the past, the budgeting of Thailand was highly centralized and overseen by the Bureau of the Budget (BOB). The BOB controlled each public agency's spending in detail through numerous separate budget allocations (Dixon 2005). In 1998, the Thai government received strong support for the public sector management reform from the World Bank and other donor agencies to change its budget allocation system to block grant funding (Painter 2006). International consultants and advisers were sent to

Thailand to assist the government in improving financial control over resources. In 1999, the BOB followed the consultants' advice to set up a new system, called "the seven hurdles approach" which would remove the central budgetary control once the public agencies met the hurdles. The Hurdle approach required each public agency to meet financial management standards in seven areas including; (1) budget planning (2) output costing (3) procurement management (4) budget and funds control (5) financial and performance reporting (6) asset management and (7) internal audit (Dixon 2005; Painter 2006). Initially the BOB was concerned that the budget tracking and control would not be strong at the agency level, and was reluctant to give up this role unless the agencies could demonstrate sound financial management skills. The Hurdle Approach was developed to allow each public agency to demonstrate these skills. This approach was different in that it was not an across the board change, but a change that would happen progressively as each agency met its hurdle and proved to the BOB that they had the skills to control the budget. The program was undertaken as a pilot project using six public agencies. However, the pilot identified that the requirement to meet all seven hurdles was too onerous and too complex for the agencies to understand and apply. It was found that each agency's financial management systems required upgrading to be able to provide the data necessary to support the budget reform. In the end it was determined that each agency should only have to meet two hurdles - a computer-based accounting system and the costing of agency outputs (Dixon 2005). An accrual based accounting system will allow the public agencies to assess financial performance in terms of surpluses (deficits) rather than mere expenditure of cash. The second stage requires the establishment of the operating budgets for block grant funding on an accrual basis (Martin 1999; Rukkavatanakul 2006).

The difficulty experienced by the agencies in the pilot is perhaps not surprising. In Thailand, the government accounting system in use at the time was the manual cash based system. As such fixed assets and long-term liabilities were not recorded against each separate government projects and programs, but were recorded in total for the state by the Comptroller General's Department (Henry & Attavidamtorn 1999). Therefore, the manual cash based system was unable to provide the costs of service delivery or the costs relevant for performance evaluation (Henry & Attavitkamtorn 1999).

This led to the next stage of the reform which was the development of a basic financial accounting system for each public agency based on accrual accounting principles. In 2001, the Thai government received cooperation from the government of Australia (AusAID) to commence the Thai government accounting reform project. The Government Financial Management Information System (GFMIS) was developed and it incorporated: government accounting policy, chart of government accounting standards, reporting standards and converting the cash based accounting system to an accrual based accounting (Nakmahdachalasin 2006, Office of the Comptroller General's Department 2001). To enable the implementation of accrual accounting the Thai public accounting standard policy was published in 2003 by the Office of the Comptroller General's Department (Rukkavatanakul 2006). Its was developed with reference to the International Public Sector Accounting Standards (IPSAS), International Accounting Standards (IAS) and Thai Accounting Standard (TAS) (Office of the comptroller General's Department 2006; Rukkavatanakul 2006).

The old and new systems (manual and computer-based accounting systems) have run as pararell systems since the 2001 budget year to present. This was necessary as time was needed to transfer large volumes of information to the computer-based system (Office of the Comptroller General's Department 2001). An accrual based accounting system also provided the opportunity for costing of government services. In 2003 the Thaksin government promulgated the 2003 Royal Decree and in Section 21 it stated that *“every public organisation must prepare service cost accounting for public service organisations in Thailand, calculate cost of activity for each public service organisation and plan to reduce cost per service unit”* (Office of the Comptroller General's Department, 2006, p. 9). The costing focus was to enable a comparison of costs between similar agencies and to assist in identification of cost reduction opportunities in the future (Office of the Comptroller General's Department 2006). Another goal of the 2003 Royal Decree is to improve budget preparation and analysis, to make the budgetary process more transparent and to make performance measurement more efficient and effective (Office of the Comptroller General's Department 2006; Rukkavatanakul 2006). For the university sector, the Office for National Education Standards and Quality Assessment (ONESQA) required the cost information to assess university performance (Office of the Comptroller General's Department 2006, p. 8).

In 2004, in response to the 2003 Royal Decree Section 21, the Office of Public Sector Accounting Standard, under the Comptroller General's Department was given responsibility to develop the basic rules for the cost accounting system. To assist in the development of the new costing system, the board of committee of the Comptroller General's Department undertook studies, both domestically and internationally on how to calculate service costs for the public sector. From this review of practices employed by other public agencies, standards were developed to guide public agencies in the calculation of service costs for reporting to government (Office of the comptroller General's Department 2006).

Therefore, in 2005, the Office of Public Sector Accounting Standard under the Comptroller General's Department published the handbook "the principle of output costing calculation" to advise each public agency how to calculate costs for output costing (Office of the Comptroller General's Department 2006). From a trained accountants perspective the hand book guidelines were very simple and attempted to explain the process of output costing using financial data from the Government Financial Management Information system (GFMIS) (Office of the Comptroller General's Department 2006). Since the 2005 budget year, the Thai government has imposed the use of the output costing standard for the Thai public sector and it is now becoming the new performance measurement tool for Thai public agencies.

One of the key performances targets of the Comptroller General's Department in the budget year 2006 was to provide knowledge and training about cost accounting practices to all public agencies. The Comptroller General's Department invited all public agencies for training in August 2006. The training was necessary as the Comptroller General's Department staff were unable to compare service costs from reports provided by the agencies in 2005. It was found that although the handbook provided general concepts about how to calculate cost it did not provide the necessary detail to allow the public agencies to provide information that was consistent and comparable. For example in the case of the public universities, differences came about due to each university interpreting the rules given in the handbook differently and as a consequence there were differences in the methods of calculating service cost in each university. One area of difference was in the identification of the cost object by the public universities, with some focusing on the teaching and learning and others on the

outputs related to the mission of each university (Office Comptroller General's Department 2006).

Therefore, despite the existence of a handbook to guide preparation of the output cost reports, the Comptroller General's Department could not compare service costs in each public university. In February 2008, the Office of Public Sector Accounting Standard Board published new guidelines for calculating the service cost in the public sector from the 2008 budget year (Office of Public Sector Accounting Standard 2008). The new guidelines were more detailed and provided worked examples of how to calculate the service costs.

2.3 Thai Educational Reform

After the 1997 Thai economic crisis, it was necessary for the Thai government to rebuild the Thai economy and to meet the requirements for foreign assistance from international funding agencies, such as the World Bank (WB), the International Monetary Fund (IMF) and the Asian Development Bank (ADB). For example, in order to secure education loans for public universities, the Thai government made a commitment to the Asian Development Bank (ADB) to reform the higher education sector (Kirtikara 2001; Nitungkorn 2001). This led to the enactment of the National Education Act 1999 details of which include:

- Restructure of the higher education administrative system through merging of the Ministry of Education (MOE), the Ministry of University Affairs (MUA) and the National Education Commission (NEC), to create the Ministry of Education, Religions and Culture.
- Transformation of public universities into autonomous public universities.
- Establishment of a national agency on education quality assurance.
- Expansion of the resources mobilization and investment in education.
- Redirection of missions of higher education towards societal participation, student-centred learning and lifelong learning (Kirtikara 2001).

One component of the education reform is focused on the transformation of public universities into autonomous universities (Office of the Education Council 2003). The idea of the "autonomous" university in Thai higher education is to develop public

universities to have more autonomy in relation to its academic matters (*academic programs and university structure*), its financial and budget management, and its personnel management (*personnel system, recruitment and remuneration benefits*) (Kirtikara 2003; Sangnapaboworn 2003; Suwanwela 2000). Kirtikara (2003) provided more insight into what the autonomous status would mean for a Thai public university and it is evident that it does not separate the university from government oversight and control:

“The concept of University Autonomy does not mean that a university is at complete liberty or totally independent from the state policy, directives and intervention. University Autonomy does not mean that the State no longer funds autonomous universities. University Autonomy does not mean that the accounts of autonomous universities cannot be audited or that the performance of autonomous universities cannot be evaluated by the State” (p. 106).

Therefore, autonomy does not mean that the university has total independence as it is still subject to state policy, directives and intervention. Funding is still provided by government and the university is subject to audit and performance evaluation from the state (Kirtikara 2003). However, in the new economic climate funding to public universities will be reduced which will mean that the universities will have to self-fund some activities and have tighter control over the university budget. It would be expected that autonomous status and lower funding by the government would lead university management to have an increased need for financial information to strengthen and support internal management.

The push to transform Thai public universities to have autonomy status during the late 1990's was not new to Thailand. University autonomy was discussed in Thailand prior to the 1997 Asian financial crisis with the Ministry of Education attempting to transform Thai public universities since 1990 (Kirtikara 2002). It started with the Thai Higher Education Long Range Plan developed in 1986-1987 when Professor Vichit Srisa-an became the Permanent Secretary of the Office of the Higher Education Commission under the Ministry of Education (Kirtikara 2003). He initiated a fifteen year Long Range Plan for Thai higher education (1990-2004). It included four major issues: equity, efficiency, excellence and internationalization. The Long Range Plan required future public universities to establish and transform to autonomous university status within ten years (by 2000) (Kirtikara 2003). Thus, the idea of the “autonomous

university” was one of the flagships of the Long Range Plan to reform higher education in Thailand (Kirtikara 2003). Furthermore, there has been an attempt by the Thai government to incorporate fifteen public universities into autonomous universities but it has not been successful. Anecdotal evidence suggests that the reason for this is that some universities do not understand the benefit to be gained, the process itself is too complex and some universities are not administratively ready for such a reform (Kirtikara 2002).

King Mongkut’s University of Technology Thonburi (KMUTT) decided to pursue the incorporation path and became the first public autonomous university in March 1998. In Thailand, there are now twelve autonomous universities. Four universities have been established from the beginning: Suranaree University of Technology (SUT), Walailuck University (WU), Mae Fah Luang University (MFLU) and Thaksin University (TSU) and a further eight public universities have been transformed into autonomous universities (*refer appendix 11*).

Thailand is not alone in pursuing higher education reform. In the next section a review of higher education reforms in different countries is given to put the Thai higher education reform into context.

2.4 Higher Education Reform

Higher education sectors around the world have faced environmental change such as expansion of student numbers and limited resources provided from the government budget (Gumport & Sporn 1999). This has led to the need for improved efficiency and effectiveness to assure service quality and value for money in the higher education sector (Arnaboldi & Azzone 2004; Tudor & Blidisel 2008; Valderrama & Sanchez 2006; Venieris & Cohen 2004; Yamamoto 2004). The concepts of new public management (NPM) such as decentralization, market-based coordination principles and management techniques have been introduced into higher education to guide reform programs (Arnaboldi & Azzone 2004; Mok 2003; Verheul 2002; Venieris & Cohen 2004; Yamamoto 2004).

Johnstone, Arora & Experton (1998) view higher education reform in the context of five themes: 1) expansion and diversification 2) fiscal pressure 3) market orientations 4) the demand for greater accountability and 5) the demand for greater quality and efficiency. Firstly, expansion and diversification are driven by demands of a growing population and the need for increasing economic competitiveness. Secondly, fiscal pressure can lead to reduced government funding. Thirdly, due to the increasing unit costs of higher education compared with the unit costs in the overall economy there has been a growth in privatised institutions. A market orientation approach has led to a reform of tuition fees which shifts some of the higher education full costs from taxpayers to parents and students, who are the ultimate beneficiaries of higher education and signals market choice. Fourthly, the main purpose is to support the need for accountability, transparency and value for money in the higher education sector. Finally, the focus is on demand for higher quality and efficiency in higher education. For example the demand for teaching staff with higher qualifications, an appropriate curriculum, the quality of course instruction, improving student assessment and quality of facilities such as libraries, computers technology and other education equipment. When reflecting on the above it is apparent that the changes all require strong financial management to cope with privatisation and market focus.

For example, in the United Kingdom (UK) higher education institutions have focused on efficiency, effectiveness and value for money (Edwards, Ezzamel & Robson 1999). This has led to the introduction of market-oriented principles with the concept of competition by providing more choices and options to students (Bridges & Launghlin 1995; Edwards, Ezzamel & Robson 1999). Financial support for universities is determined by the research output (Bridges & McLaunghlin 1995; Jacobs & Ploeg, 2006; McLendon 2003). To support this change in direction there has been the need for new accounting and budgeting innovations to support the UK education reform (Edwards, Ezzamel & Robson 1999). The reform of accounting and budgeting systems were expected to provide economic information for decision making in terms of assessing the costs and benefits.

In Australia, education reform was introduced for greater accountability, quality and efficiency from education providers. It is hoped that this will encourage competition and choice in the running of education services (Abbott & Doucouliagos 2003). The higher

education reform program is attempting to achieve greater economies of size and scope by consolidating higher education institutions into a smaller number of very large and multi campus universities. Accounting reform in Australian higher education has been seen to improve both the budget system and the performance management system (Moll 2003). The budget system was used to promote a sense of equity and fairness and to reduce the conflict in the universities. For example most of the Australian Government's funding is allocated to universities in block grants. The funding allocated for teaching is based on discipline groupings and levels of study rather than the type of institution. The funding allocated for research is based on research performance of the individual university (Abbott & Doucouliagos 2003; Moll 2003).

In Asian countries, after the Asian economic crisis, higher education reform has been seen in Hong Kong, Singapore, Taiwan and South Korea (Mok 2003), Japan (Yamamoto 2004; Murasawa 2002), Indonesia (Verheul 2002), Malaysia (Tayib & Hussin 2001) and Thailand (Kirtikarn 2001; Sangnapaboworn 2003; Suwanwela 1996). Mok (2003) pointed out that higher education reform in Asia is focused in line with NPM to achieve efficiency, effectiveness and decentralized management environments. Higher education reform has flexibility to explore alternatives to public provision of service, establishment of productivity targets and a competitive environment between public sector organisations, along with the strengthening of strategic capacities at the centre of organisation (Mok 2003; Verheul 2002). In Hong Kong, Singapore, Taiwan and South Korea the government have introduced a market focus to inform policy development that has led to decentralization to allow individual universities to have more flexibility and autonomy to run their businesses. For example financial and accounting reform was one program in line with NPM to support the call for value for money in higher education (Mok 2003) with the objective is to improve cost control, budgeting and performance measurement in public universities (Mok 2003). In Malaysia, the budgeting system of Malaysian public universities did not accurately reflect performance (Tayib & Hassin 2001). Malaysian reforms looked at changing budget practices and performance evaluation practices (Tayib & Hassin 2001).

In Japan, the government also required national universities to transform into independent administrative institutions (IAIs). The objective is to minimize financial support to universities and allow universities to manage their own operations.

In Indonesia, after the 1997 Asian economic crisis, higher education reform followed the public sector reform in line with NPM. The idea of university autonomy and accountability for the institutions is combined with comprehensive accreditation and evaluation systems. One reason for the higher education reform program in Indonesia is to improve funding and budgeting systems for public universities. The concept of output and outcome of the education system is oriented as a new education quality system. The number of graduate students will determine the amount of funding. A new budgetary system will be introduced based on block grants instead of itemized budgets (Verheul 2002).

In the next section the focus will go back to Thailand to discuss the public sector reform which led to the accounting reform in Thai public universities.

2.5 Accounting Reform in Thai Public universities

In relation to higher education reform in Thailand the following principles and strategies were developed: (Veesakul 2004, pp.13-15):

- The establishment of an organisation responsible for setting the criteria and proposing recommendations for budgetary allocation for higher education institutions.
- The budgetary allocation system to be adjusted from supply-side financing to demand-side financing.
- The students' share for higher education expenditure will be suitably and justly adjusted by streamlining the present student loan scheme or income contingent loan for greater efficiency. There will also be various measures to support and assist the underprivileged as well as the gifted and talented.
- Block grants from the national budget will be distributed to higher education institutions on the basis of the different tasks.
- The state budgetary allocation for capital and unnecessary construction costs will be decreased. The amount available will be duly transferred to the general subsidy for the projects for quality improvement of higher education.
- The accounting system of public higher education institutions will be streamlined and standardized. The system will be on an accrual basis. The funds,

work plans, responsible units and financial statements will also be standardized for facilitating comparison.

- Higher education institutions will be encouraged to increase mobilization of resources from various sources with the state providing supporting mechanisms. The funds thus raised will be added to the state budgetary allocation for implementation of the projects for quality improvement.

It follows that accounting reform is seen an integral part of the wider agenda of higher education reform to enable the public universities to be more efficient, effective and to provide services based on value for money in Thailand (Kirtikara 2003).

In Thailand, the Comptroller General's Department under the Ministry of Finance is the central department for Thai government accounting. It is responsible for the government accounting system and controls the costs and revenues associated with the public sector. The Bureau of Budget under the Office of Prime Minister is responsible for controlling the budget through public sector spending. Therefore, all public agencies including all public universities need to follow the accounting rules and regulations designed by the government. Thai public universities had to improve its management practices to survive in an environment of reduced budget support from government (Office of Commission on Higher Education 2003). This is similar to the experiences in other countries whereby financial pressure was seen as one of the root causes of educational reform in Europe and the United States (Humport & Sporn 1999).

Further understanding of the problem experienced by Thai public universities in relation to the existing financial management practices was given in the series out of the Research and Development Project on Higher Education Management System in Thailand. In this report the following factors were identified as root causes of financial and accounting system problems in Thai public universities (Veesakul 2004).

- The presence of two budget systems and two accounting systems with different regulations and rules of spending. There are two sources of budget: government funding and university funding (tuition fees). Due to more flexible rules and regulations in relation to the university funding the top management of the university are able to make decisions for spending. This can have the potential

of causing a lack of accountability and transparency of university spending.
Lack of cost information and lack of actual public service cost report

- Lack of systematic accounting practice due to the use of a cash based accounting system.
- Difference in the budget year (1 October -30 September) and the academic year (1 April – 31 March) led to an inability to get a full picture of public monies being spent each year
- Lack of a centralized and systematic way to control the revenue and expenditure at different levels of university: the faculty, the department and the project levels.

To overcome these problems, it was necessary for the university sector to improve its accounting systems. The Office of the Higher Education Commission under Ministry of Education in response to the environmental pressure commenced the accounting reform in public universities by introducing “*Three-dimension accounting system*”. This was a new accounting system developed specifically for public universities to provide more accounting information by taking a more holistic approach rather than just simply focusing on financial recording. The purpose of three dimensions accounting was to allow control of university expenditure in three dimensions: planning, organizing and funding (Office of the Higher Education Commission Ministry of Education 2003).

Before universities were able to reform the accounting system, it was necessary for the Office of the Higher Education Commission under the Ministry of Education to seek approval from the Comptroller General’s Department to link the new public university accounting system with the new government accounting system. In August 2001, the Comptroller General’s Department agreed with the Office of the Higher Education Commission and they announced the three-dimensions accounting system for Thai public universities (Office of the Higher Education Commission 2003). The new accounting system for the universities is structured on standard accounting practices of private sector entities. An accrual accounting system is to be applied in the first stage before shifting into three-dimensions accounting system as cash accounting records do not provide the cost information necessary for performance assessment. Further, the new accounting system for the universities is consistent with standard accounting practices of any corporation which includes the preparation of a balance sheet and income statement. The new financial statement form was designed to combine

university budgeting and government budgeting. Additionally, the three-dimensions accounting system includes activity based costing (ABC). ABC is one cost technique to support cost control in public universities (Office of Commission on Higher Education 2003).

Due to the different financial year between the budget and the academic year, in October 2001 one of the initiatives of the accounting reform was to align these and the reporting period for both is now October to September. However, accounting reform in Thai public universities is not without its problem. It appears that accounting reform has been taking place for approximately nine years (from 2001-2010). However, the reform is still an ongoing process in most universities

2.6 Chapter Summary

This chapter presents a discussion of the background of both higher education reform and accounting reform in the Thai public sector with a focus on Thai public universities. One important development has been the introduction of NPM financial management practices which has improved the efficiency, effectiveness and quality of education systems. A change from traditional accounting practices in line with NPM practice has played an important role in the reform of higher education by providing the opportunity for improved accounting information which should enable improved decision making. The next chapter provides a literature review focusing on public sector reform, with a focus on accounting practice in the environment of new public management (NPM), to further understand the impact of NPM on public agencies.

Chapter 3

Corporate Governance and New Public Management

3.1 Introduction

In this chapter a literature review is provided which discusses the links between corporate governance and new public management (NPM). NPM is viewed as a component of corporate governance leading to improved organisational performance in the public sector. Moreover, the literature review explores accounting and organisational change in the public sector.

3.2 Corporate Governance

Corporate governance has become an issue of increasing importance in organisations following the financial crisis in both developed and developing countries (Hodges, Wright & Keasey 1996; Reaz & Arun 2006; Wu 2005). Corporate governance is concerned with how an organisation is controlled and how it conducts itself and has led to the need for organisations to change and to improve its management practices (Hood 1995; Huque & Moll 2001; Scapens 1994; Van De Ven & Poole 1995; Waweru, Hoque & Uliana 2004). Improvements include changing procedures, organisational structures, people, and business processes (Holloway 2006). Therefore, corporate governance is a catalyst for changes in management practice (Bowornwathana 2004; Holloway 2006; Jinarat & Quang 2003; Jongsureyapart 2006; Painter 2006).

The origin of the term “corporate governance” is rooted in Latin. The Latin words “gubernare” and “gubernator” refer to steering a ship by the steerer or captain. The old French word “gouvernance” means control and the state of being governed (Farrar 2001). The Organisation for Economic Co-operation and Development (OECD) 1999 suggests that corporate governance refers to a system by which enterprises are directed and controlled (Ryan & Ng 2000). Much of the current debate on corporate governance stems from the Cadbury Report released in 1992 and its author Cadbury (2002, p.2) defined corporate governance as being:

“... concerned with holding the balance between economic and social goals and between individual and communal goals. The governance framework is there to encourage the efficient use of resources and equally to require accountability for the stewardship of those resources. The aim is to align as nearly as possible the interests of individuals, corporations and society...”

Corporate Governance places more accountability on the policy makers, managers and stakeholders concerned with both private and public sector organisations (Chen et al. 2006; Hodges, Wright & Keasey 1996). Improved corporate governance practices are expected to increase accountability, transparency, and fairness in the organisation (Chuanrommanee & Swierczek 2007; Jinnarat & Quang 2003; Seward & Walsh 1996).

3.2.1 Corporate Governance within Organisation

A key function of corporate governance is to instil best practice in the internal operations of an organisation (Lannoo 1999; Larbi 1999; Reaz & Arun 2006) including planning, organising, commanding, controlling and co-ordinating (Christensen & Laegreid 2001; Solomon 2007). In the private sector the board of directors are viewed as the principal mechanism for corporate governance in an organisation (Stanwick & Stanwick 2002). They have the primary role of setting broad policy, strategic direction and oversight and control over senior management and corporate financial performance in the organisation (Holloway 2006). In the public sector, the government of the day would take this responsibility. To maximize the long-term benefits to stakeholders, governance is important to protect not only the interests of shareholders, but also other stakeholders such as employees, customers, suppliers, and the community (Vinten 1998). It should also secure confidence from other stakeholders in ensuring that organisations are accountable for their actions and also monitor and control the operational systems and performance measurement of the organisation (Proctor & Miles 2002). Good governance structures are particularly valued for promoting improved financial information and act as a catalyst for organisational changes to promote better performance (Lannoo 1999; Larbi 2001; Reaz & Arun 2006).

Felton, Hudnut & Van Deeckeren (1996) point out that investors view good corporate governance as critical after the Asian economic crisis as a lack of corporate governance

has been identified as one of the main causes behind the crisis (Jinarat & Quang 2003; Trairatvorakul 1998). This was due to the lack of transparency and lack of disclosure of important financial information that led to the financial collapse in Asian countries.

3.2.2 Corporate Governance in Different Countries

Different countries have created systems of corporate governance by following the country's specific legal, institutional and cultural characteristics. Therefore, corporate governance models vary across countries and regions (Reaz & Arun 2006). A number of scholars have classified corporate governance into four systems (Aguilera & Cazorra 2009).

1. Anglo-Saxon system (USA, UK, Canada, Australia)
2. Germanic System (Germany, Netherlands, Switzerland, Sweden, Austria, Denmark, Norway, Finland)
3. Latin System (France, Italy, Spain, Belgium) and
4. Japanese System

The Anglo-Saxon system has a strong legal characteristic to protect shareholders interests. Stakeholders have a strong influence on decision making. For example executives holding shares and particularly institutional owners have strong influence on major policy decisions. In the Anglo-Saxon system, especially in the United States (US) and the United Kingdom (UK), the central focus is to protect the interests of individual shareholders and investment firms (Stanwick & Stanwick 2002). The recent happening in the corporate sector of the US and Europe and the resulting loss of public confidence in their capital markets have heightened the need for better corporate governance (Reaz & Arun 2006; Stanwick & Stanwick 2002). In the US, the corporate crisis of 2001 has emerged as a major shock for many countries. The bankruptcy of Enron and WorldCom gave a lesson about poor corporate governance and led to the loss of public confidence in the American capital markets and as a consequence the Sarbanes-Oxley Act (2002) was enacted for stronger corporate governance. This act includes strict rules, for example financial controls, financial disclosures, corporate responsibility and auditor independence. The corporate governance reform undertaken in the US has the objective of protecting the interests of stakeholders (Wu 2005). Other developed countries such as

Australia, New Zealand and the UK have also introduced reforms in line with the objective of improving governance (Lannoo 1999; Ryan & Ng 2000, Tambulasi 2007).

The Germanic system is one where there is limited involvement of the shareholder in decision making. Shareholders have a weak influence on decision making where in contrast, institutions such as banks have strong influence. In the Latin system, shareholders have more influence than in the Germanic system but less than in the Anglo Saxon system (Rosen 2007). In the Japanese system, employees have considerable influence on decision making as well as banks who are providers of large debt.

However, the systems of corporate governance are different in developing countries. Owners, executives and families have strong influence on decision making for shareholders benefit (Larbi 2001; Stanwick & Stanwick 2000). The attention to corporate governance reform in developing countries comes from the 1997 financial crises in Asia, Russia, and Latin America (Wu 2005). Poor corporate governance was one factor influencing the need for improved accountability, transparency, and fairness in both the public and private sectors (Bowornwathana 2000; Chuanrommanee & Swierczek 2007; Jinarat & Quang 2003; Wu 2005). International funding agencies such as the World Bank, the International Monetary Fund (IMF) and the Asian Development Bank (ADB) have strongly supported the development of improved corporate governance in these developing countries (Bowornwathana 2000; Larbi 1999; Mongkol 2007; United 2003; Wu 2005). Donor agencies realized that the success of economic reform in developing countries would be dependant on the quality of corporate governance (Larbi 2001; Reaz & Arun 2006). From a developing country perspective, good corporate governance has been seen as imperative since its economy heavily depends upon foreign investments (Bowornwathana 2000; Larbi 2001). In this respect, good corporate governance is considered important to enable improvement in management practices and organisational performance in developing countries (Bowornwathana 2000; Chuanrommanee & Swierczek 2007; Jinarat & Quang 2003; Larbi 1999; Mimba, Helden & Tillema 2007; Tambulasi 2007; Wu 2005), and it has become central to the change in management practices (Hood 1995; Yamamoto 1999; Painter 2006).

In the public sector corporate governance has become an issue of increasing importance (Barrett 1997; Ezzamel & Willmott 1993, Bazley & Hancock 2006). Governance is considered by some scholars to be a new approach to public administration in developing countries and also a catalyst for organisational change to achieve improved performance (Barret 2000; Bowornwathan 2000; Mongkol 2007; Tambulasi 2007). The next section will focus on corporate governance in the public sector.

3.2.3 Corporate governance in the public sector

The public sector plays a critical role in economic, social, and cultural life and is directly involved in the improvement of areas such as health and education. In the public sector, corporate governance is concerned with structures and processes for decision-making and controls behaviour that support effective accountability for performance outcomes (Barret 1997). James Walfensohn the President of the World Bank (1999) defined governance as “the traditions and institutions by which authority in a country is exercised through its economic, political and social institutions” (Rich 2002).

The principles of corporate governance are the same in both the public and private sectors, meaning that if the private sector is concerned about running business efficiently and effectively, public sectors are about seeing that it is run properly (Barret 1997). However, Ryan & Ng (2000) argue that there are differences between the private and public sector, for example different stakeholders. The stakeholders in the public sector are the citizens of the countries but stakeholders in the private sector are the people who share the benefits from the company. Therefore the public sector framework emphasises the need for integrity, honesty and high standards of propriety and probity in public funds spending and the management of the government agency’s activities (Larbi 1999).

In relation to the public sector, the World Bank considers good governance includes four elements: participation, accountability, transparency and predictability (Larbi 1999; Woods 2000).

1. Public sector management emphasizing the *participation* for effective financial and human resource management through improved budgeting, accounting and reporting, and rooting out inefficiency particularly in public enterprises
2. *Accountability* by having effective accounting, auditing and decentralization, and generally making public officials responsible for their actions and responsive to consumers
3. Availability of information and *transparency* in order to enhance policy analysis, promote public debate and reduce the risk of corruption; and
4. A *predictable* legal framework with rules known in advance; a reliable and independent judiciary and law enforcement mechanisms.

These values aim to promote transparency, accountability, efficiency, fairness, participation and ownership in the public sector (Woods 2000). A review of the literature on corporate governance indicates that many countries have applied the concept of “corporate governance” to government departments and agencies (Barret 1997). The government of UK introduced corporate governance reform in 1995 (Ryan & Ng 2000) with “best value for money” as the key objective of UK public sector reform (Ezzamel & Willmott 1993). The National Health Service (NHS) is an example of this whereby the UK government is concerned about giving the people in the country the best system of healthcare in the world (Clatworthy, Mellett & Peel 2000). In the public sector good governance emphasises improved management systems (Ezzamel & Willmott, 1993; Howard & Purdie 2005) and requires the public sector to disclose important information to the public. Accounting information was found necessary to support more accountability and transparency of government activities (Larbi 1999 2003). Therefore, corporate governance has been an important catalyst for the public sector to change its financial management systems.

3.3 New Public Management (NPM)

New Public Management (NPM) is used to describe the change in management practices of the public sector towards more private sector practices with a focus on results rather than processes (Hood 1995). NPM can be viewed as a component of good governance leading to improved organisational performance in the public sector

(Bowornwathana 2000; Mimba, Helden & Tillema 2007; Painter 2006; Tambulasi 2007), and it has become central to the change in management practices (Hood 1995; Painter 2006; Yamamoto 1999).

The objective of the change in management practices is to increase efficiency and effectiveness in an attempt to improve the overall performance and accountability of the public sector (Boston 1991; Simpson 2004). Therefore, NPM introduces a new imperative for efficiency and transparency into all elements of the public sector (Boston 1991, Hood 1995). An NPM focus combines the aspects of administration such as planning, organizing and controlling with the aspects of management such as the management of human, financial, physical, information and political resources (Borins 1994; Hood 1995; Larbi 1999; Osborne & Melaughlin; Painter 2006; Yamamoto 2003).

According to Hood (1995) the concept of NPM is about decentralizing management, commercialisation, privatisation, outsourcing and downsizing. Hood (1995) identified seven key elements of NPM:

1. More emphasis on the public management professional.
2. Explicit formal measurable standards and measures of performance and success.
3. Greater emphasis on output controls and stress on results rather than procedures.
4. A shift to disaggregation of units in public sector.
5. More contract-based competitive provision, with internal markets and term contracts.
6. Stress on private-sector styles of management practice.
7. More stress on discipline and frugality in public sector resource use.

First, the focus is on the public management professional who has more autonomy to manage resources such as assets, financials and personnel. Second, the focus on performance measurement through the establishment of objectives, targets, goals and indicators which can be measured both from a quantitative and qualitative aspect. It also linking of funding allocation and the reward systems. Third, the focus is on results rather than processes with increasing control over output. Fourth, the separation of the functions of purchaser and provider to give a quasi-market form. The purchaser and provider distinctions will be able either within the government or between the governments. Fifth, the competition among public agencies through a tendering process through which the government could lower costs and increase standards. Sixth, the

government stressing private sector management practices and techniques is practiced in the public sector. Finally, resource utilisation and cost cutting through downsizing programs in order to reduce or be more efficient with government expenditure (Hood 1991).

Hood's key elements highlights how NPM reforms lead to organisational change with a goal to strengthen management capacity in government and to introduce extend this to those sections of the public sector that are not privatised. NPM reform also introduces performance incentives and the disciplines of a market environment (Flynn 2000). Additionally, Borins (1995) considers NPM delivers higher quality services, increases the autonomy of public administration, links reward systems to performance measurement, human and technology resource management and open mind with a private sector rather than a public sector attitude.

Ehsan & Naz (2003) from their review of NPM studies have identified five core principles of NPM which align with the key elements mentioned by Hood (1991) and Borins (1995):

1. Downsizing by reducing the size and scope of government.
2. Managerialism from the use of business protocols in government.
3. Decentralization by moving decision making closer to the service recipients.
4. Debureaucratisation by restructuring government to emphasize results rather than processes.
5. Privatization by directing the allocation of governmental goods and services to outside firms.

The core principles mentioned above highlight the need for efficiency in resource usage and management. Accounting is an important tool to allow those within the organisation to meet such financial challenges. So it is not surprising that many authors mention that accounting information is an important element in NPM (Hood 1995; Lapsley 1999; Yamamoto 1999; Braid 2007) as it can provide the information necessary to measure and control activities (Clarke & Lapsley 2004; Venieris & Cohen 2004). However, there is no universal tendency towards the same NPM model (Torres 2004). There have been a number of studies investigating NPM accounting reform in North America, Europe,

U.K., Scandinavia, Australia and New Zealand (Hood 1999; Brignall & Modell 2000; Clarke & Lapsley 2004; Torres 2004; Mimba, Helden & Tillema 2007). The influence of NPM on accounting practices in public sector reforms is recognized.

According to Manning (2001) NPM may be difficult to apply in developing countries due to differences in the characteristics of developing countries compared to developed countries. To further review the difficulties with NPM reform in developing countries reference to the work of Mimba, Helden & Tillema (2007) helps in understanding the reasons that limit its success. Mimba, Helden & Tillema (2007) have identified four factors which can influence NPM reforms in developing countries:

1. Low institutional capacity
2. Limited involvement of stakeholders
3. High levels of corruption and
4. High level of informality.

Low institutional capacity relates to lack of necessary infrastructure and ability to achieve the goals set. This can be evidenced by: weaknesses in regulatory practice, a low level of public accountability, administrative inefficiencies, limited human resources, lack of facilities, insufficient funding, lack of transparency, and an inability to deliver goods and services to the citizens. A limited involvement of stakeholders can occur when the public sector management only pays attention to the more powerful stakeholders which could either be internal, such as public sector officials and civil servants, or external, such as the international funding agencies. Often the citizens of the developing country have limited involvement. Situations can also arise where civil servants use their power in the wrong way to gain benefit for their own self. This corruption leads to an increase in the costs of delivery of public goods and services to the citizens. Factors supporting the incidence of corruption are weak control systems and gaps between the needs and incomes of civil servants. Informality reigns when formal rules and regulations are not followed.

A number of studies in developing countries highlight the above barriers. Samaratunge, Alam & Teicher (2008, p.42) provides a discussion of the NPM reforms in Asian countries: Bangladesh and Sri Lanka. Both in Bangladesh and Sri Lanka the reforms

were deemed not successful due to the “absence of strong political power and weak accountability systems” (Samaratunge, Alam & Teicher 2008, p.42). The NPM reforms focused on structural changes rather than attempting to introduce rule-based government or installing the necessary infrastructure to support NPM practices. As a result the NPM reform was unsuccessful due to the complexity of change due to both the lack of the necessary tools and the risks associated with the political climate.

In developing countries, research in Nepal and Malawi has highlighted both drivers for and barriers to reform (Atreya & Armstrong 2002; Tambulasi 2007). In Nepal drivers for administrative reforms were in line with NPM with the catalysts being external pressure from the international agencies such as the International Monetary Fund, the World Bank and the Asian Development Bank and internal pressures due to the lack of effective governance and lack of a well functioning public organisation (Atreya & Armstrong 2002). The weakness of institutions and procedures posed a higher risk of corruption and were identified as barriers to the reform. It seems that administrative inefficiencies of the government in Nepal limited the success of the reform process (Atreya & Armstrong 2002). In Malawi, the NPM reform drivers were internal pressure for the need to increase managerial control and decreased political power at the local government level. Reform in Malawi’s local government is similar to the other developing countries wanting a shift towards more efficiency, effectiveness, accountability, and transparency of public management. However, low institutional capacity due to lack of qualification and skills of people who work in the Malawian government sector weakened the reform. Also a high level of informality led to a lack of sufficient control over the local government (Tambulasi 2007).

Marwata & Alam (2006) explored the process of NPM accounting practice in Indonesian local government. Due to the outdated financial management system, information quality was poor and led to wrong decisions being made. However, changing the system was not without its problems. Low institutional capacity was seen with the lack of preparation and training of qualified staff to guide the accounting system change process. Another factor was a limited involvement of stakeholders. Even the President disagreed with having government accounting standards that could allow the government finances to be judged. Another barrier was due to the leader culture, in that changing the boss also meant changing the policy in Indonesia. In the Indonesia

local government, informality was seen with the universities and other public agencies developing their own financial systems. They did not follow the formal rules because the guidelines were late and did not arrive for more than 12 months after the systems were put in place.

For the developing countries, NPM reform is a new initiative. NPM is seen to guide the accounting reform process but the characteristics of each developing country will influence what reforms are implemented and whether the reforms are successful in meeting the objectives set by each country (Mimba, Helden & Tillema 2007). The reform drivers of NPM can be either generated from external and/or internal pressures. The requirement to meet the funding criteria of International agencies and the need for more detailed financial information, economic performance data, and the changing needs and demands of citizens and institutions are the main reasons behind the reform of government practices in developing countries.

However, the evidence shows that it is not easy to adopt NPM in developing countries. It depends on the background and unique characteristic of each developing country (Atreya & Armstrong 2002; Mimba, Helden & Tillema 2007; Samaratunge, Alam & Teicher 2008; Tambulasi 2007).

3.4 Good Governance in Thailand

Corporate governance reforms in Thailand were prompted by the 1997 Asian economic crisis and the structural weakness in the Thai economic system (Bowornwathana 2000; Mongkol 2007; Trairatvorakul 1998). As a condition for funding the international funding agencies such as the World Bank (WB), International Monetary Fund (IMF) and Asian Development Bank (ADB) required the Thai government to reform the public sector in line with the principles of good governance to ensure accountability to stakeholders and to improve the transparency and disclosure of accurate and comprehensive information (Bowornwathana 2000; Trairatvorakul 1998; Mongkol 2007). The NPM reform was central to the change in management practices in the public sector. Mongkol (2007) identified the public sector reform being stimulated first

during the Prime Minister Chuan Leekpai Regime (1997-2000) and then continuing with the Thaksin Chinnawatra's government (2003-2008).

In late 1997 Chuan Leekpai became Prime Minister of Thailand. In response to the Thai economic crisis, the Chuan government promulgated the 1997 Constitution which supported the development of a governance paradigm in Thailand (Mongkol 2007). His government started a reform program for the public sector in line with New Public Management (NPM). The Office of Public Sector Development Commission (PDC) has responsibility to design the NPM model for Thai public sector. The NPM model of New Zealand was used to guide the Thai government to transform public administration as a results-based model (Mongkol 2007). In Thailand, the model aims to improve the quality of civil servant's career with an emphasis on the outcome, quality, honesty, and public-mindedness. Another aim was to prevent and eliminate corruption in the civil service and political system by establishing the National Counter-Corruption Commission organisation (Rangsiyogrit 2003).

The Public Sector Reform Master Plan 1999 developed in Chuan's government included five dimensions.

1. Revision of the role, functions and management of the public sector
2. Revision of the personnel management system
3. Revision of law and legal system
4. Reform of public service culture and values
5. Finance and budget reform

The NPM model of Chuan's government aimed to improve the quality of civil servant's function with an emphasis on the revision of the role, functions and management of the public sector. It was expected that the public sector would become more responsive, flexible and efficient. A human resource management system was developed and it was hoped to have highly qualified, disciplined and accountable staff. Laws and regulations were to be updated, to be easy to interpret, be uncomplicated, have greater speed and efficiency and be an international standard. The reform also aimed to promote better ethics in terms of five core elements: the rule of law, integrity, transparency, accountability and value for money. Also it had the objective of improving financial

management with a focus on reforms to the budget system and a better performance-based budgeting in public agencies (Mongkol 2007).

Further in 2001, the political power base changed with the sweeping election victory of Thaksin Shinawatra and his Thai Rak Thai Party. Thaksin had a successful employment background in the private telecommunications industry which gave him business expertise and the knowledge that financial information was important to assist in decision making, planning and control. The Thaksin government initiated an administrative reform program in line with NPM (Painter 2006). The model of NPM was based on the leading democratic countries such as the United States of America, United Kingdom and Australia (Mongkol 2007). The Thaksin's government developed the Public Sector Reform Strategic Plan 2003-2008 which had seven elements.

1. Streamline and redesign of work processes
2. Restructure of public organisations
3. Revamp of financial and budgetary systems
4. Redesign of the human resource management system and compensation schemes
5. Inculcate a new mindset, work culture and values
6. Modernise government operations
7. Encourage public participation.

The NPM model of Thaksin placed emphasis on the time taken to deliver public services. Taking too much time to complete each public service was seen as an issue in the old government. One-stop service approach was introduced to the government service. The Thaksin's policy was to reduce not only the time taken for delivery of the public services but also to raise standards of delivery of these services. Cooperation and networking between both internal organisations and outside organisations was encouraged to allow flexibility and increase capacity. The introduction of private sector accounting techniques was established, for example, moving from cash to accrual accounting and budgeting and a cost control system. The Thaksin model aimed to improve evaluation, motivation and reward systems for government officials. In order to stop any corruption and unethical behaviour in the public sector, the Thaksin model focused on transforming mindsets and creating a new organisational culture and norms. The use of information and communication technology was used to promote the modernisation of government operations. The key of e-Government was to provide

better services to the public and to improve its own service function. Coupled with this was the aim to promote greater democratisation to citizens and to ensure accountability and transparency of government operations by providing information via the website (Mongkol 2007).

Therefore, the strategic plan for the public sector included: streamlining and rationalization; restructuring and reorganisation; budgetary and financial reform; human resource management and compensation reform; changing work culture and values; modernization through e-government; and encouragement of public participation in public sector (Painter 2006). Consequently, the public sector is now run and organized under the principles of the governance paradigm following the new performance standards of civil polity, in that the government must be effectively accountable, open, and transparent. Civil polity is especially concerned with the issue of fairness in public services and the adherence to the new international codes of behavior and ethics (Mongkol 2007).

Secondly, in 2003 the Thaksin government announced an act of law to promote good corporate governance practice. The Royal Decree on Good Governance was promulgated that had four underlying principles: accountability, public participation, information disclosure and performance monitoring and evaluation (Mongkol 2007). One of the details of the 2003 Royal decree section 21 is that every public agency must prepare service cost report which details the cost of activities for each public agency (Office of the Comptroller General's Department 2006, p. 9). The costing focus was to enable comparison of costs between similar agencies and to assist in identification of cost reduction opportunities in the future (Office of the comptroller General's Department 2006). Another goal of the 2003 Royal Decree was to improve budget preparation and analysis, to make the budgetary process more transparent and also to make performance measurement more efficient and effective (Office of The Comptroller General's Department 2006; Rukkavatanakul 2007). Thus, the need for cost accounting information was necessary to support the call for more accountability, transparency and value for money of government activities in Thaksin's government.

Therefore, a new model of corporate governance was introduced into Thailand that was a direct result of the 1997 Thai economic crisis (Bowornwathana 2000). International

funding agencies have supported the NPM reform in Thailand (Mongkol 2007). For example Thailand was coerced by the International Monetary Funding (IMF) during the Asian Financial Crisis to implement social and economic policies as preconditions for any form of financial assistance (Pongpaichit & Baker, 2000). The first NPM reforms were introduced by the Chuan's government and put forward by "the continuation of far-reaching NPM sector reform by the Thaksin's government" (Mongkol 2007). In Thailand, the Thai public sector reform has been seen to improve quality of public service with accountability, transparency and value for money in line with NPM (Hood 2001). However, public sector reform in Thailand is not without its problems due to the Thai political culture. The evidence shows that public sector reform has been taking place through the life of two government's for approximately eleven years (from 1997-2008).

There were three major problems associated with the public sector reform in Thailand during 2003-2007 (Office of the Public Sector Development Commission 2009).

(1) Government officers were confused about the reforms due to insufficient communication and training. Emphasis has been given to the executive level who then did not communicate with the practitioner level.

(2) During the past several years the Thai public sector has been trying to develop at a fast pace. However, this has led to problems due to the number of initiatives and a new measures being experimented with that have just created a climate of confusion and has actually led to a sluggish pace.

(3) Lack of confidence of government officials due to the changing political landscape. The government officers are not sure if the public sector development policy is still valid or how the process will be changed.

From 1999-2010, there has been an ongoing political crisis with a conflict between the government and the People's Alliance for Democracy. Thai political leaderships have changed several times: Prime Minister Chuan Leekpai (1999-2001); Thaksin Shinwatra (2001-2007); Sorayut Chulanon (2007-2008); Samak Sundaravej (2008-2009); Somchai Wongsawat (2009); and Abhisit Vejjajiva (2009- present). Although

there have been changes to the government the public sector accounting reform is continuing.

In the next section, governance in relation to Thai public universities is further discussed.

3.5 Good Governance in Thai Public Universities Sector

After the 1997 Thai economic crisis, the Asian Development Bank (ADB) which provided funding to the Ministry of Education requested that all public universities become autonomous in order to improve the efficiency of administration (Kirtikara 2003; Sangnapaboworn 2003). In securing the education loan for public universities, the Thai government made a commitment to the Asian Development Bank (ADB) that existing public universities would be incorporated by 2002. Good governance was introduced as an important practice through the concept of autonomous public universities (Kirtikara 2001). The autonomous status would allow universities to manage their own affairs in three major areas: academic, personnel and finance, with a need for accountability to stakeholders by transparency and disclosure of accurate and comprehensive information (Kirtikara 2003).

Accounting reform is viewed as an important component of corporate governance in the Thai public universities as it will assist in meeting the requirements of transparency, accountability and value for money of public university's activities. Reform will include changes to the budget system, accounting system and performance measurement system. Performance evaluation of faculties' functional units as well as senior administrators is to be carried out by a university council. The internal audit unit will be strengthened to undertake internal auditing and performance evaluation, in addition to simply auditing accounts normally carried out by public agencies. Reporting, auditing and assessment will become regular features and are a manifestation of the transparency and accountability dimensions of good governance (Kirtikara 2003). A systematic transition of public higher education institutions from being a part of the Civil Service to autonomous institutions will happen. Indicators of preparedness for the transformation will be developed by the Public Sector Development Commission (PDC) (Office of the Comptroller General Department 2003). There is the belief that the

capacity for governance in term of autonomous management will be strengthened (Kirtikara 2003).

The change to autonomous status will pose new responsibilities for the university management especially in an environment of reduced government funding. In response to this many universities have had to be innovative in their funding sources. This has led to the concept of the entrepreneurial university. This will be further discussed in the next section.

3.6 Corporate Entrepreneurial Universities

Corporate entrepreneurship refers to an internal management process which leads to a variety of innovations in organisational activities (Antoncic & Hisrich 2000). These can be seen as new business ventures, innovative activities and developing strategies for decision-making (Zaharia & Giber 2005).

The transformation of Thai public universities to have autonomous status and the reduced funding from government will require university management to seek funds from other sources. It could be said that the management will need to be more entrepreneurial in their activities in order to self-manage the academic affairs and look for opportunities for additional funding from sources other than the government.

However, not much is known about the increasing importance of entrepreneurial orientations, activity or innovation and their performance impacts in public universities. In OECD countries (such as US, UK, Sweden, Denmark, the Netherlands, Belgium, Australia, New Zealand), the introduction of an entrepreneurial approach to management is necessary to meet the challenging demands of the higher education sector faced with environmental changes such as expansion of student numbers and limited resources provided from the government budget. In Australia, the link between research and budgeting has been seen to support entrepreneurial activity. For example the funding allocated for research is based on research performance of the individual university (Abbott & Doucouliagos 2003; Moll 2003). This contributes to entrepreneurship oriented performance based-budgeting in Australian universities. In

developing countries (such as Russia, China, Kenya, Chile and Africa), many universities have started entrepreneurial activities to generate their own revenues. The self-financing of the universities will be dependent on public revenue. For example China has run short-term training courses, research and consulting to increase their university income. African universities have introduced student tuition fees to move closer to full cost recovery. In Chile, the Chilean government introduced a Higher Education reform program to improve structural issues and financial management. The introduction of fees in the public higher education system almost non-existent prior to these reforms is now an important source of funds for universities. In Argentina, higher education institutions have been given the option by law of deciding whether or not to charge fees to students (Jonestone, Arora & Experton 1998).

Therefore, funding changes has been the key stimuli to encourage corporate entrepreneurship within universities. Jonestone, Arora & Experton (1998) explained that the reform of higher education financing related to: (1) devolution of management (2) budget reform and (3) restructuring of higher education institutions. Firstly, devolution of management refers to the introduction of private sector type management and market orientation into internal management control. The main focus of the academic governance is to improve quality of higher education and for it to be delivered in a cost-effective manner. Secondly, performance based budgeting is viewed as a key for budget reform. Finally, the idea of restructuring is about self-financial management. The Higher Education Financing reform programs around the world have meant that universities have to take responsibility for financial management and funding budget shortfalls. Both challenges require university management to be more innovative (and therefore entrepreneurial) in their management of the universities. Therefore, the concept of corporate entrepreneurial universities supports the view of improving internal management to focus on effectiveness and delivering services that provide value for money in higher education.

In Thailand, the Thai bureaucratic system, where there is high government control and regulation, impacts upon the internal management within Thai public universities. The Thai higher education system has three problem areas: finance, personnel and academic matters. Firstly, the financial problems relate to inefficient financial management structures for example the limitation of funding and lack of financial management

flexibility in the rules of the Civil Service under the public higher education system (Kirtikara 2001). The limitation of national funding is a major problem for university management. Universities have to find new ways to increase their revenue. The strong rules of public spending are not suited with university management. The flexible rules of public spending are needed for university management. In Thailand, the environment of “Entrepreneurial Universities” is not new (Rangsunneun 2008). Many universities started to gain benefits from entrepreneurial business activities. For example Chulalongkorn University, Mahidol University, Chaing Mai University, Khonkaen University and Prince of Song Kla University have established university hospitals that generate incomes (Kirtikara 2002). University hotels have been seen as one of entrepreneurial business activities for Rajaphat Universities and Rajamagala Universities. Other opportunities have been taken by the larger Thai universities, as they have built student dormitories for on campus living. Moreover, Chulalongkorn University and Khonkaen University have leased university land to private sector investment entities to be used for shopping centres within their university. Chulalongkorn University has an advantage in this regard as this institution holds land in the centre of Bangkok which is very attractive for private sector investors wanting to start businesses in the university location. These initiatives taken by various universities can be seen as entrepreneurial oriented self-financing of the Thai public universities.

Secondly, the personnel management problem refers to the lower government salaries paid to university employees than their counterparts with the same level of education qualifications, in the industrial sector and private sector in Thailand. Thus, the wage differential has the potential of draining the universities of experienced staff as they would be attracted to the higher salaries on offer in the private sector. The dual personnel management system has been implemented to resolve this problem by allowing employees to be classified as either civil servants or university employees. University employees will be able to receive a higher salary than their civil servant counterparts (Kirtikara 2002). This reflects university management using an entrepreneurial approach to decision making and being innovative in the employment of university staff.

Thirdly, the academic problems refer to the lack of a systematic approach to decision making by university academic management. Kirtikara (2002) refers to decision making

as being a long process which is highly centralised with the Ministry of Education always being involved in the process.

3.7 Chapter Conclusion

This chapter has presented a literature review relating to the theoretical background of factors influencing public sector reform. The concept of corporate governance was found as a key factor influencing public sector reform that promoted transparency, accountability, efficiency, fairness and participation in the public sector. NPM is a component of corporate governance and was designed to improve overall performance and accountability of public sector. To further understand the process of accounting change including factors influencing and affecting the change, accounting change models are discussed in the next chapter.

Chapter 4

Accounting and Organisational Change

4.1 Introduction

This chapter examines the literature on accounting change and its role in organisational change. It discusses the development of accounting change models to explain the change process and how previous research has developed these models to understand the causes of change, the drivers of change, together with the facilitators of and barriers to change. The models have been developed based on research in both the private and public sector. In addition there will be a discussion of accounting techniques used to support accounting change.

4.2 Organisational Change

Organisational change is a process whereby the organisation moves from its present state to some desired future state to increase its effectiveness (Chen et al. 2006). This is also the view held by Hempel & Martinsons (2009) who consider organisational change occurs when an organisation moves from an initial state to a different end state in order to achieve one or more objectives. There are many different factors that can be catalysts for organisational change such as: an economic crisis; a new strategy such as cost reduction strategy; dissatisfaction with the performance in relation to profit or return on investment; strong attraction to moving to a more desirable condition; or to be able to meet goals and targets (Ahrens & Dent 1998; Anderson & Lanen 1999; Chenhall & Langfield-Smith 1998; Dent 1990; Dervitsiotis 1998; Waweru, Hoque & Uliana 2004). Organisational change can involve improving the organisation in at least one or more of the following areas: human resources; functional resources; technological capabilities; and organisational abilities (Jones 1998). Therefore, the goal of organisational change is to search for new or improved ways of using resources and strengthening capabilities to increase an organisation's ability to create value and improve returns to its stakeholders (Chen et al. 2006; Hempel & Martinsons 2009).

Cao, Clark & Lehaney (2003) identified four different types of organisational changes that can occur: 1) Changes to organisational processes; 2) Changes in organisational functions, their organisation, co-ordination and control; 3) Changes in values, beliefs and human behaviour in terms of relationships to social rules and practices; and 4) Changes in power distribution and the way organisational issues are influenced. However, all these types of changes can be interrelated within an organisation (Cao, Clark & Lehaney 2003).

There are many models of organisational change such as: Lewin's (1952) three stage model of unfreezing, moving and refreezing, the distinction between incremental and radical change by Johnson and Scholes (1993), incremental change and quantum change by Greenwood and Hinings (1993), three forms of change-identity, coordination and control by Kanter et al. (1992); and the human-centred classification of change at individual, group, inter-group organisation level by Burnes (1992).

The focus on the process of change identified by Lewin (1952), which has been used as the template for later models, as it can be applied to understand the process of accounting in organisations. Lewin's change model was the basis for many models of organisational change (Armenakis & Bedeian 1999; Cao, Clark & Lehaney 2003; Chen et al. 2006). The model can be broken down into three steps: unfreezing; moving; and refreezing. Unfreezing is identified as a problem causing a need to change and the need to seek a new solution. The second step is moving which involves the changing of behaviours and attitudes of those within the organisation, changing the organisational structure and changes to the process. Finally, refreezing refers to the assessment of the results of the change and to the procedural revision assuring that the change will be accommodated within the organisation (Armenakis & Bedeian 1999; Cao, Clark & Lehaney, 2003; Cummings & Worley 1993; Fernandez & Rainey 2006).

Lewin's change model has six stages to understand organisational change.

1. Understanding the pressure of change.
2. Defining the need for change.
3. Analysing the problem of change.
4. Planning for the change.

5. Implementing for the change.
6. Following up on the change.

Firstly, the need for change and whether it is from environmental pressures and/or needs of the organisation itself. Secondly, defining the need for change which requires the leader and those involved in the organisation to be able to understand and analyse the causes of the problem. Thirdly, after defining the causes of the problems, the need to collect data about current operations, through interviews, observation, survey instruments or archival sources, and then analysing them. Fourthly, planning to change and considering what to change. Change can be categorized as changes in structure, task, technology or people. Change in structure, or reorganisation, is related to reorganizing departments, revising the span of control or decentralization. Thus, the purpose of reorganisation is to create organic or adaptive organisations. Changes in technology may involve installing a new product line, inventory control system or new selection procedure. Also change in people can come about through training programs, conferences or other development activities to provide the skills they need for their new tasks. Fifth, implementing the change involves changing structure, strategy, task, people or technology in the organisation. The last stage refers to assessing the results of the change process.

Therefore, Lewin's change model identifies the overall steps that need to be taken to successfully implement a change process. It identifies that change occurs in multiple steps analysis, action and review and if mistakes arise in any step the time taken for the process can be extended beyond the original timeframe. Organisation change encompasses any change within an organisation and in the following section discussion will focus on accounting change within an organisation.

4.3 Introduction to Financial and Management Accounting Change

Accounting is defined as the process of classifying, recording, measuring, summarizing and report transactions and then communicating this information to decision makers (Eldenburg et al. 2008; Petterssen 2001). Financial accounting focuses on providing information about what has happened and therefore is more historical in nature. Such

reports provide financial information to internal and external users such as, investors, creditors, employees, government agencies and others. Management accounting is a system of measuring and providing operational and financial information including both financial and non-financial information to internal users (Ansari & Euske 1987; Brooks et al. 2005; Petterssen 2001). Management accounting provides tools and techniques for planning and controlling organisational activities. As it is focused on decision making the information it provides to internal users is forward looking (Eldenburger et al. 2008; Jackson & Lapsley 2003). For example budgets are developed to support manager's decisions about future operations and the setting of performance targets allow managers to control and assess operations. Management accounting techniques are also needed to support the provision of advanced accounting information such as: activity based-costing (ABC), balanced scorecard (BSC), key performance indicators (KPIs) (Anderson & Lanen, 1999; Hoque 2005; Kasurinen 2000; Waweru, Hoque & Uliana 2004,) and performance base-budgeting, target costing and resource management (Burns & Scapens 2000) and Zero base-budgeting (Lauth 1978). Such techniques enable better control over resources in the organisation and assist in gaining the knowledge to adapt to the rapidly changing organisational and social environment (Anderson & Lanen 1999; Burns & Scapens 2000).

Financial accounting plays a central role in providing information and financial accounting techniques, such as accrual accounting, which are considered essential to improve the overall performance and accountability of an organisation (Cohen, Kaimenaki & Zorgios 2007; Venieris & Cohen 2004). The accrual accounting model makes it possible to assess performance such as the total cost of organisational activities and services (Cohen, Kaimenaki & Zorgios 2007; Venieris & Cohen, 2004).

Therefore, accounting change occurs with the development of new accounting techniques and practices (Cobb, Helliard & Innes 1995; Innes & Mitchell 1990; Lapley & Wright 2003; Luder 1992). Scapens (1998) points out that without an understanding of the role of financial and management accounting practices and techniques in the organisation, it might be impossible to explain financial and management accounting change as useful to those in the organisation. In the following section, the role of accounting change in organisational change is further examined.

4.4 Accounting Innovation in the Public Sector

Innovations can be defined as the development and implementation of new ideas (Van de Ven 1986). Chan, Jones & Luder (1996) defined government accounting innovations as the development of something new or different with every change being referred to as “reform”. Additionally, the definition of accounting innovation by the Comparative International Governmental Accounting Research (CIGAR) organisation is “a more informative public sector accounting system”. Jackson & Lapsley (2003) defined accounting innovation in the public sector by referring to the development of new accounting techniques and practices. Thus, the introduction of government accounting innovation and reform can be seen with the change of accounting technique used within the public sector. The new government accounting innovations are expected to provide more and better financial information of government activities (Chan, Jones & Luder. 1996).

Accounting techniques have been introduced in the public sector in line with NPM (Christensen 2002; Hood 1995; Lapsley 1999; Venieris & Cohen, 2004). Financial accounting techniques such as accrual accounting were considered essential to support NPM and lead to an increase in the efficiency and effectiveness in an attempt to improve the overall performance and accountability of public sector (Boston 1991; Hood 1995; Lapsley & Wright 2004; Lye, Perera & Rahman 2005; Simpson 2004). The accrual accounting model makes it possible to assess performance measurement in items such as the total costs of government activities and service (Venieris & Cohen, 2004; Tudor & Blidesel 2008). Management accounting techniques are also support NPM reforms (Hoque 2005). Public reform needs these modern management accounting technique such as activity based-costing (ABC) (Brawn, Booth & Giacobbe 2004; Braid 2007; Harrison & Reeve 2006), balanced scorecard (BSC), key performance indicators (KPIs) (Andon, Baxter & Chua 2007; Kasurinen 2000; Lawrence & Sharma 2002) and budgeting (RAB), target costing, function analysis, resource management and zero-based budgeting (ZBB) to control the public system and to adapt the rapidly changing organisational and social environment (Jackson & Lapsley 2003; Lapsley & Wright 2004). For example cost technique such as ABC are used to measure costs more accurately which can lead to more efficient and effective use of resources and better measurement financial performance (Baird 2007; Venieris &

Cohen, 2004; Tambulasi 2007). ABC has been introduced to the public sector with aims toward an increase in the accuracy of cost measures, thereby allowing for better control and performance measurement (Baird 2007; Lapsley & Wright 2004; Granof, Platt & Vaysman 2000). ABC can be considered as an administrative innovation in the public sector (Baird 2007; Lapsley & Wright 2004).

A number of studies have investigated the adoption of new accounting techniques in different governments and their agencies (Braid 2007; Christensen 2002; Jackson & Lapsley 2003). Such changes can include: cash to accrual accounting; line item budget allocations to program budgets and introduction of output costing (Baird 2007; Clarke & Lapsley 2004; Cohen, Kaimenaki & Zorgios 2007; Venieris & Cohen, 2004; Yamamoto 1999).

In Anglo Saxon developed countries such as New Zealand, UK and Australia there has been a move from cash to accrual accounting to meet the key criteria of performance management reforms. The purpose of the introduction of accrual accounting is to increase more transparency of agency performance and to improve efficiency and effectiveness. The accrual accounting model makes it possible to monitor performance in items such as the total costs of government programs, activities and service. These practices relate to the strengthening of accountability requirements that focus on management by results, performance indicators, accrual accounting and accrual budgeting (Clarke & Lapsley 2004; Cohen, Kaimenaki & Zorgios 2007; Larbi 1999; Torres & Pine 2004; Rosen 2007; Venieris & Cohen 2004; Yamamoto 1999). In addition to accrual accounting system, there has also been a shift from traditional (line item) budget to program-performance budget (Larbi 1999).

In the Germanic countries, Austria and Germany show similar behaviour in the implementation of performance management reforms. Both maintain the traditional budgetary structure (without implementing management by results), performance indicators and accrual accounting and budgeting at federal level. The Southern European countries show few initiatives in implementation of performance management reform so they remain concerned with the management of input. France, Portugal and Spain have introduced accrual accounting at the central level, although it overlaps with their traditional budgetary accounting system. The Nordic countries show outstanding

performance management initiatives. Accrual accounting was implemented in Sweden, Denmark and Norway at the central government level. Finland is output oriented. The Dutch central government has a cash based accounting system with an accrual framework (Torres& Pine2004; Larbi1999).

In the Belgium higher education has been investigated accounting techniques such as accrual based accounting has been introduced to measure academic assets and liabilities (Christiaens & Wielemaker, 2003). In Greece, the introduction of accrual accounting, cost accounting and budgetary administration increased the efficiency and effectiveness of Greek public university administration (Venieris & Cohen 2004). The implementation of accrual accounting in Romanian higher education has provided improved information for decision making. The information now allows for the comparison outputs among departments (Tudor& Blidisel 2008).

Jackson &Lapsley (2003) and Lapsley & Wright (2004) investigated the diffusion method of government accounting innovation in the public sector. Local authorities, government agencies and healthcare public sectors were selected to study. Accounting techniques examined included costing, budgeting and performance measurement techniques. Jackson & Lapsley (2003) found that accounting techniques have been used to support public sectors reform. For example ABC was used as a costing technique. Zero-based budgeting (ZBB), resource management and activity-based management were used as budgeting techniques. The balance scorecard and KPIs were used extensively as performance measurement tools in the public sector. These techniques were expected to improve public sector reform to serve organisation environment change. It also expected that the public sector would have more transparency, accountability and service provision giving value for money in line with corporate governance and NPM reform.

This suggests that accounting techniques (innovation) act as tools to support accounting reform in the public sector. One technique that has been adopted by public sector agencies is activity based costing (ABC). For the public sector the traditional accounting system was cash based. Such a system merely reports receipts and payments and does not provide the necessary information for costing of services which is

necessary for performance evaluation. The next section focuses on ABC to provide an understanding of its contribution to financial management.

Activity based –costing (ABC)

Activity based-costing became popular in the mid-1980s (Kaplan & Anderson 2003). The ABC system is broadly suggested as a key technique for improving the behavioural, business and accounting practice in organisations (Anderson 1995; Clarke, Hill & Stevens 1999; Foster & Swenson 1997; Shields 1995). ABC focuses on costs associated with activities, and assigns the indirect costs to the specific activities performed in a service deliver process. The key benefit of ABC has been seen to increase the accuracy of cost measurement by relating the cost more closely to the cost object. ABC provides improved information for pricing and cost control. This suggests that ABC also provides improved information for decision making. For example ABC information can also lead to change in the operational design of the firm (Clarke, Hill & Stevens 1999). In recent years, ABC has become to be regarded as one of the most significant costing innovations (Cropper & Drury 1996; Kaplan & Anderson 2003).

The development of costing technique have been seen in the UK (Mitchell, 1996), Spain (Valderrama & Sanchez 2006), Italy (Arnaboldi & Azzone 2004) and Australia (Jarrar, Smith & Dolley 2006). The UK used ABC to support cost centre allocation in the universities (Mitchell 1996). Italy used ABC as a management accounting tool to enable benchmarking between university departments (Arnaboldi & Azzone 2004). The developed ABC costing model provided valuable information for decision-making in Spanish universities (Valderrama & Sanchez 2006).

The effectiveness of cost and management accounting systems within universities has been considered by many researches (Cropper & Drury 1996; Granof, Platt & Vaysman 2000; Mitchell 1996). ABC has been introduced by universities to assist in providing improved information for decision making (Granof, Platt & Vaysman 2000; Hanham 1988; Mitchell 1996). In the early 1990s UK, Higher Education Funding changed its rules and this acted as a catalyst for some universities to develop new costing system within universities (Mitchell 1996). The ABC was introduced to assist university management in providing strong financial management through

improvements in planning, monitoring and resource allocation within the universities (Cropper & Cook, 2000). ABC can be applied by universities to focus on the costs of university department, courses, activities and other programmes (Granof, Platt & Vaysman 2000; Mitchell 1996). Using ABC in a university department can allow more effective control of costs associated with faculty and staff, such as faculty activities including teaching, research and academic service. Mitchell (1996) argues that ABC has attractive benefits particularly in manufacturing organisations, but certainly difficulties arise in its implementation in a university. Mitchell (1996) noted the difficulty in reconciling an essentially centralist view of cost in with an increasing move to devolution within institutions. Prior literature reviewed that it is not easy but it is not impossible to implement ABC in the university.

To further understand the adoption of NPM in a developing country, the next section provides a background of corporate governance and NPM reform in Thailand.

4.5 Accounting and Organisational Change

According to Hopwood (1987) “*accounting can be seen as being actively drawn upon in the construction of new organisational forms and boundaries*”. In other words, accounting is important in both shaping change, and allowing other changes to occur. Factors that can influence the change include the power of economic and market forces, the role of new technology, the form of the organisation and the ideas in bodies of knowledge (Hopwood 1987).

Therefore, many different factors could lead to the need for accounting change. Contingency theory is a major theory that has been applied to explain the complex relationship between accounting and organisational change (Innes & Mitchell 1990; Luder 1992; Luft & Shields 2003; Morakul 1999; Van De Helden 1995). As noted by Otley (1980) there is no appropriate accounting system which can be applied to all organisations. Contingency theory is used as the framework to understand contingent variables to explain why and how accounting has changed in an organisation. This suggests that different factors may influence accounting change in different ways in different organisations (Otley 1980; Innes & Mitchell 1990; Morakul 1999; Waweru, Hoque & Uliana 2004).

Therefore contingency theory has been used to examine both external and internal factors (contingent variables) which lead to the need for accounting change in an organisation (Anderson & Lanen 1999; Cobb, Helliard & Innes 1995; Innes & Mitchell 1990; Kattan 2007; Otley 1980; Morakul 1999). External factors relate to uncertainty of the organisational environment such as global competition, market pressure, new technology and political issues (Haldma & Laats 2002; Hopwood 1988; Otley 1980; Waweru, Hoque & Uliana 2004). The main internal factors relate to organisational size and institutional strategies that might have their own impact on organisational structure, budgetary control and performance measurement (Anderson & Lanen 1999; Baird 2007; Luder 1992; Hopwood 1988; Waweru, Hoque & Uliana 2004). In the public sector the need for efficiency, value for money and cost effectiveness is also powerful forces behind accounting change (Hood 1995; Hopwood 1998).

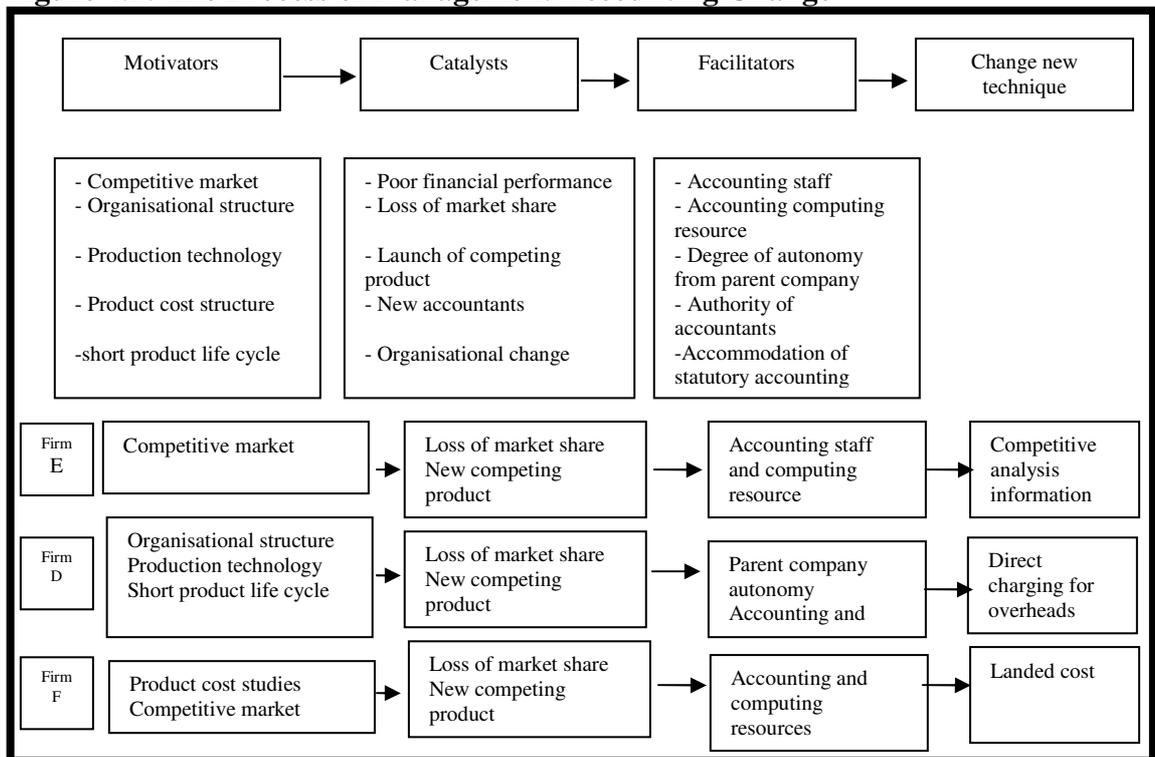
In accounting research, there have been a number of studies investigating factors influencing accounting change in organisations in both the public sector and private sector. These models further breakdown the six stages indentified by Lewin (1952) and enable a closer examination of the change process. For the public sector, Luder (1992) developed a model of government accounting change which has been applied by many researchers (Christensen 2001; Godfrey, Devlin & Merrouche 1996; Yamamoto 1999). In the private sector, Innes & Mitchell (1990) developed a model to investigate accounting change which has been applied by many researchers (Cobb, Helliard & Innes 1995; Kasurinen 2002). Both models come from different disciplines, however, each model helps in understanding the process of accounting change in either sector. In the following section the models will be further examined.

4.6 Accounting Change Models – Private Sector

Through their research into Electronic companies in Scotland, Innes and Mitchell (1990) developed a model to investigate accounting change (refer figure 4.1). They identified three major factors influencing accounting change which they described as motivators, catalysts and facilitators. *Motivators* are those factors that influence accounting change and relate to the level of competition in the market, the organisational structure, the production technology, the product cost structure and the

length of the product life cycle. *Catalysts* are those factors that influence accounting change and are associated with poor financial performance, loss of market share, the launch of a competing product, new accountants and organisational change. *Facilitators* are those factors that affect the success of accounting change and refer to accounting staff resources, computing resources and the degree of autonomy from the parent company. Innes & Mitchell (1990) consider accounting change can occur through the interaction of these three types of factors. The motivators and catalysts act positively to generate change but can only become effective when suitable facilitating conditions exist. Figure 4.1 illustrates the process of management accounting change as outlined by Innes & Mitchell (1990).

Figure 4.1: The Process of Management Accounting Change

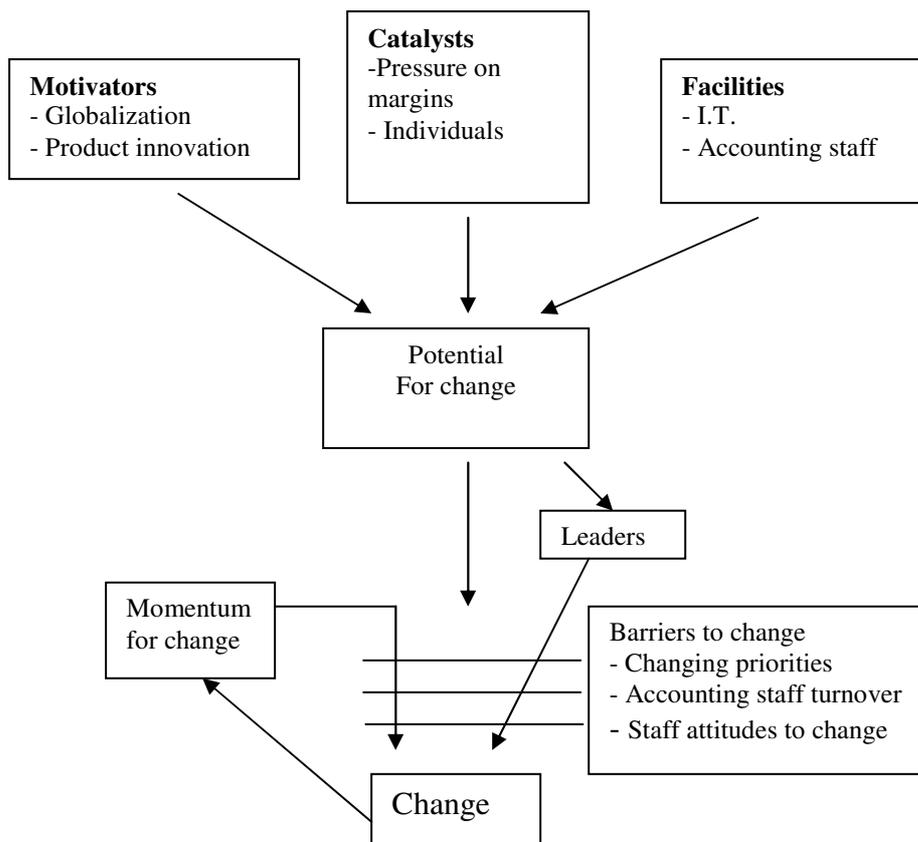


(Source: Innes & Mitchell 1990, p. 14)

Innes and Mitchell's (1990) model for accounting change is strongly focused on only factors that drive change and lacks explanation on how the process of accounting change occurs within an organisation. Further extension of the model was provided by Cobb, Helliard & Innes (1995).

Cobb, Helliari & Innes (1995) investigated of changes in the management accounting practices within the division of the UK bank. The findings emphasised three variables that support and affect change: (1) the role of individuals as leaders, (2) the momentum of change and (3) barriers to change. Figure 4.2 illustrates the Innes and Mitchell accounting change model as adapted by Cobb, Helliari & Innes (1995).

Figure 4.2: Concept Map Summarizing Thesis Structure



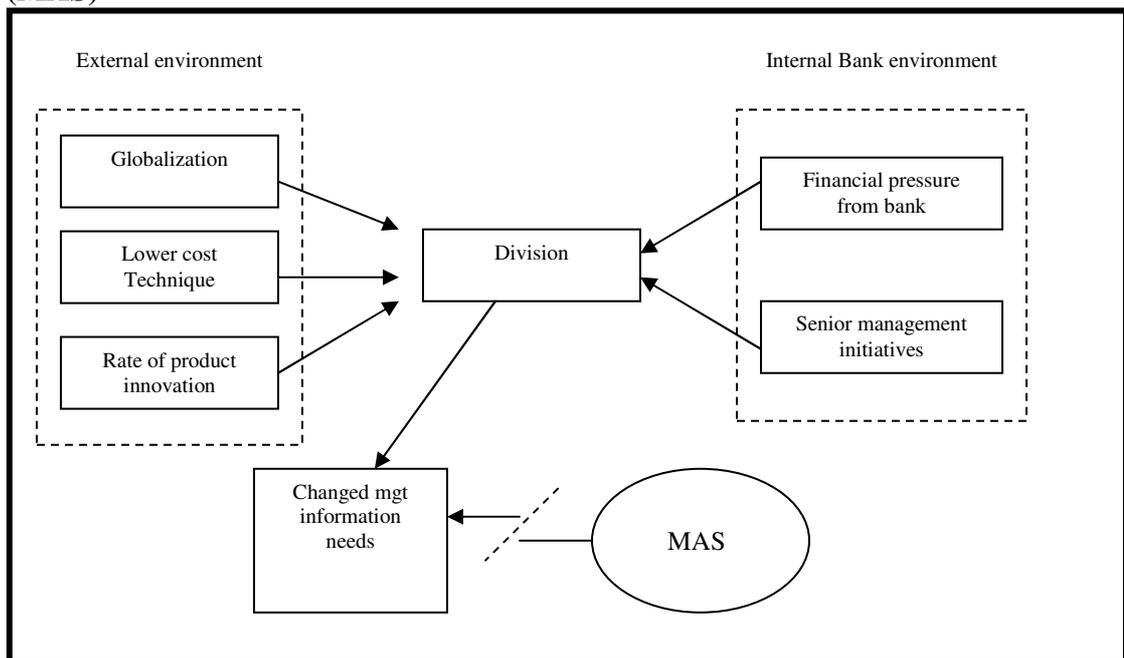
(Source: Cobb, Helliari & Innes 1995, p. 173)

Cobb, Helliari & Innes (1995) explain that the process of change can happen through people in the organisation in relation to their need for information and their attitudes to the change process. For example, in the research site a new Board Member and anew Divisional Financial Controller, senior managers in the organisation, played key roles in the change process by requesting more information from the systems to help deal with the high bad debts. Also the momentum for change can be influenced by the expectations of those people within the organisation. The attitudes of those within the organisation to the change process can either act as a barrier to or a facilitator of the

change process. Other barriers can come from accounting staff turnover and staff's current priorities.

Cobb, Helliard & Innes (1995) also highlighted that both external and internal factors led to management accounting change. Figure 4.3 illustrates the bank division's environment and its management accounting system. It highlights that the external bank environment was the primary reason for change due to the impact of globalisation, availability of lower cost technology and the rate of new product innovation. For example the competitive markets led to the need for new technology which led to the need for lower costs and an increasing rate of new product innovation. Cobb, Helliard & Innes (1995) also emphasised internal factors within the bank environment such as a new senior management who required new/updated accounting information due to financial pressure brought about by the high level of bad debts (see Figure 4.3).

Figure 4.3: The Division's Environment and Management Accounting System (MAS)

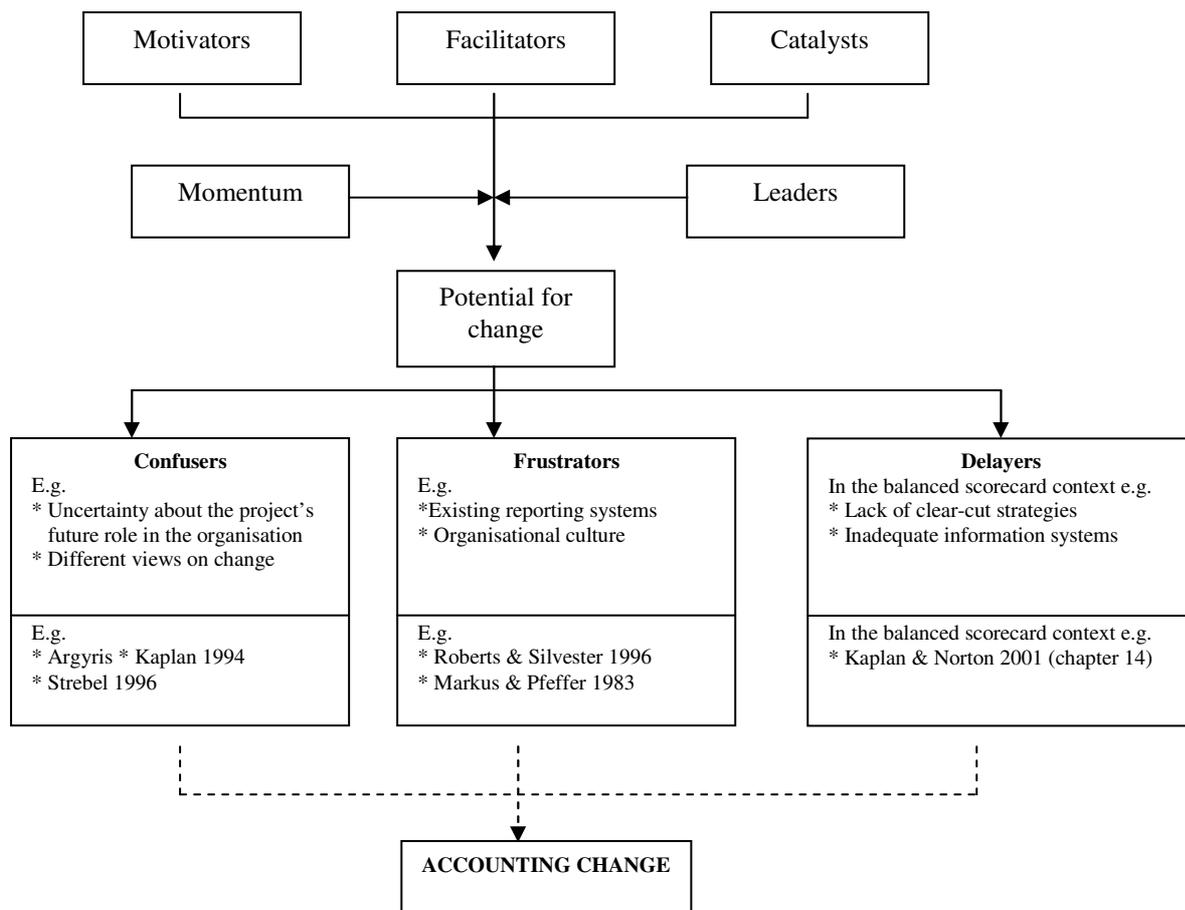


(Source: Cobb, Helliard & Innes 1995, p. 175)

Therefore, Innes & Mitchell's (1990) model focused on the broad drivers for change (motivators, catalysts and facilitators) and Cobb, Helliard & Innes (1995) added three specific variables (the role of individual leaders, employees giving momentum for change and staff issues being barriers to change). However, Cobb, Helliard & Innes (1995) model has limited focus in terms of barriers to change.

Further adaptations to the accounting change model were made by Kasurinen (2002) who examined factors influencing management accounting change with a focus on the balanced scorecard. Kasurinen (2000) revised the accounting change model by further identifying barriers to change. Figure 4.4 illustrates the adapted accounting change model developed by Kasurinen (2002).

Figure 4.4: Revised Accounting Change Model by Kasurinen (2002)



(Source: Kasurinen 2002, p. 338)

Kasurinen divided the barriers to change into three types: confusers, frustrators and delayers. *Confusers* refer to uncertainty about the project's future role in the organisation and different views on the change. For example the complexity of the project environment and the uncertainly role of the project manager in the organisation. *Frustrators* refer to the existing reporting systems and organisational culture. For example in the research site the engineering culture is weak on the role of strategies and the role of diagnostic measurement but the balanced scorecard was regarded as a tool

combining both financial and non-financial information. *Delayers* refer to the lack of clear-cut strategies and an inadequate information system. For example the analysis of the delayers brought forward the difficulties in specifying the business unit strategy in the balanced scorecard context. Kasurinen (2002) found the balanced scorecard was limited to the context of the change implementation process and also suggested that the organisation should be more thorough in defining the balanced scorecard in the first stage. The lack of a clear-cut balanced scorecard strategy and the uncertainty about the project's future role in the organisation acted as a delayer and led to lack of success.

In the next section accounting change models developed for the public sector will be discussed.

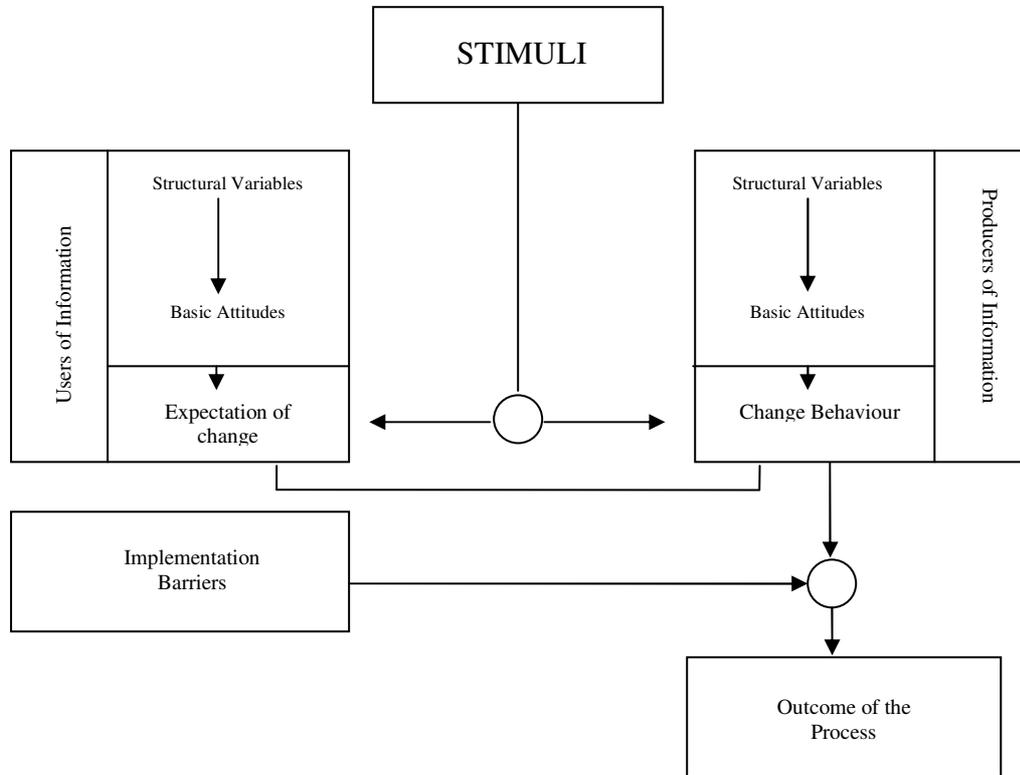
4.7 Accounting Change Models - Public Sector

The original model for accounting change in the public sector was developed by Luder (1992) after his investigation of government accounting reform in nine countries (Germany, Denmark, the European Community, France, Sweden, United Kingdom, United States) in the mid to late 1980s and early 1990s. In 1994 Italy, Japan and Spain were added and summarized into Luder's work. Luder's model has been revised and applied by many researchers (Christensen 2002; Godfrey, Devlin & Merrouche 1996; Godfrey, Devlin & Merrouche 2001; Jaruga & Nowak 1996; Ollorilanto 2008; Saleh 2006, 2007; Yamamoto 1999). Although Luder's Model (1990) looks at the public sector the model describes accounting change in a similar way to that of Innes & Mitchells' Model (1990).

Luder (1992) developed the contingency model more specific to government accounting innovation and he identifies contextual and behavioural variables potentially relevant in explaining the outcome of the government accounting reform. The contingency model raises questions about the catalysts for the adoption of government accounting innovation and how the outcome of the process can be measured (Luder 1992; Chan, Jones & Luder 1996). The model explains the transition from traditional government accounting to a more informative system addressing the need for reliable accounting

information in the public sector to enable improved financial control of government activities.

Figure 4.5: Contingency Model of Public Sector Accounting Innovations – Basic Model



(Source: Luder 1992, p. 2)

From figure 4.5, it can be seen that Luder (1992) classified the model into four categories: (1) stimuli, (2) structural variables, (3) characteristics of the political administrative system and (4) implementation barriers

1. *Stimuli* relates to events that happen at the first stage of the innovation process which generate the need for improved information on the part of the users and increases the producer’s readiness to supply such information.

2. *Structural variables* are the features of the social environment of the government in the public sector that influence the basic attitudes of users and producers of information towards the idea of a more informative form of public sector accounting.

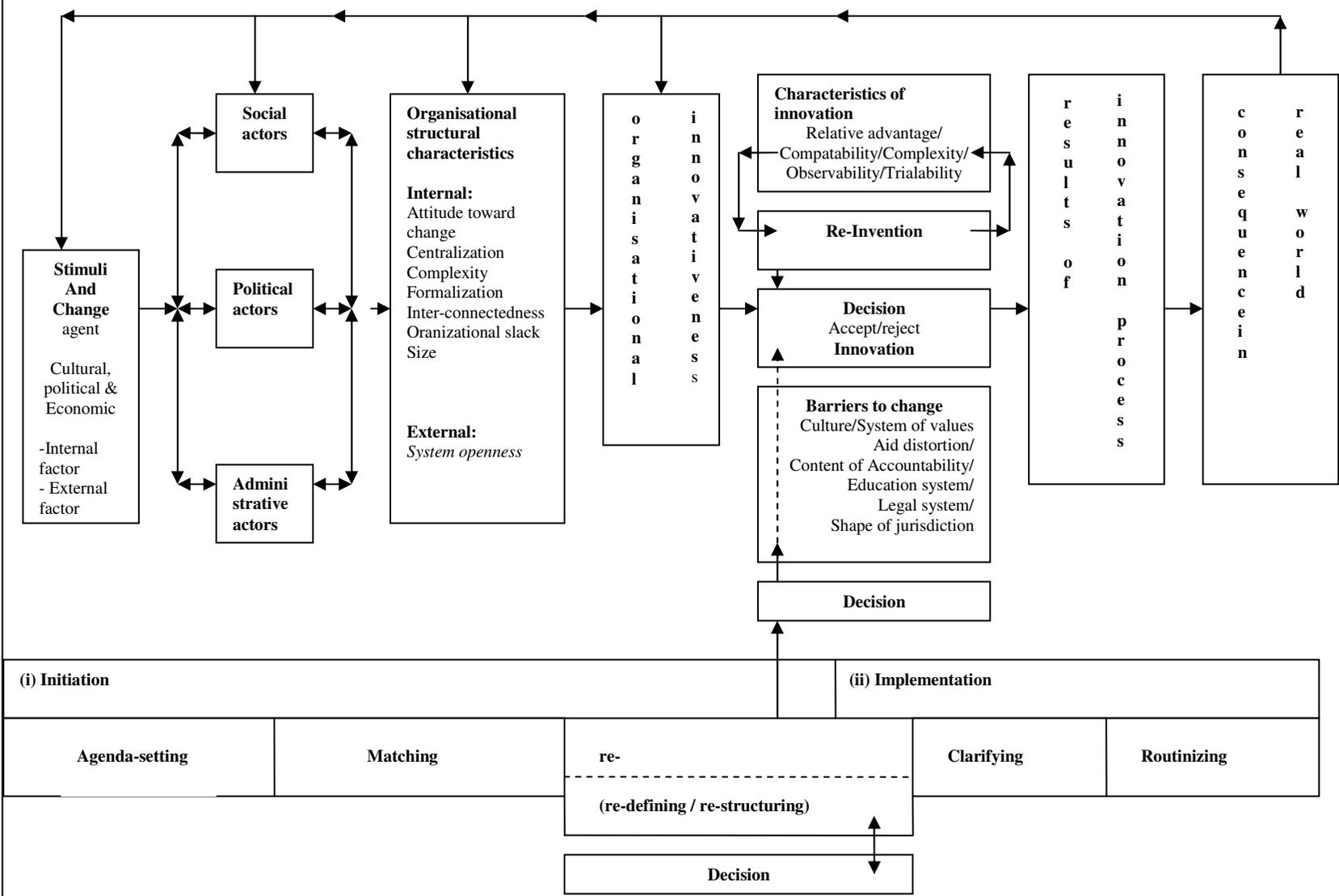
3. *Characteristics of the political administrative system*- refers to features of the political administrative systems in the public sector that influence the basic attitudes of users and producers of information towards the idea of a more informative form of public sector accounting.

4. *Implementation barriers* are the environmental conditions that hinder the process of implementation, thus hindering, and in extreme cases preventing, the creation of a more informative accounting system which is in principle desirable

Luder (1992) emphasised that the main purpose of the contingency model was twofold: firstly, it was proposed to serve as a framework for empirical investigations into governmental accounting reforms and to assist in the comparison of research carried out by different researchers. Secondly, it aimed to trigger further research in confirming, falsifying amending and also applying it. A number of scholars have further studied the contingency model by adding and specifying additional variables to further understand the change process (Christensen 2002; Godfrey, Devlin & Merrouche 1996; Yamamoto 1999).

Godfrey, Devlin & Merrouche (1996) modified the contingency model for developing countries. Their main contribution was to introduce contingent variables in relation to the influence of international funding organisations and donor agencies (Godfrey, Devlin & Merrouche 1996). The demands of international organisations and donor agencies in providing assistance can directly or indirectly stimulate the change process (Godfrey, Devlin & Merrouche 1996; Hood 1995). Godfrey, Devlin & Merrouche (1996) emphasised that developing countries might change their accounting system to meet international funding agencies' requirements. Moreover, this suggests that developing countries may change their accounting practice not only to satisfy external demand but also to improve the country's international reputation (Godfrey, Devlin & Merrouche 1996). Godfrey, Devlin & Merrouche (1996) set up the model to explain the diffusion of government accounting into two stages: initiation stage and implementation stage. The initiation stage identified the impact of internal and external stimuli for change. The implementation stage explains the process of change including barriers to change. Figure 4.6 illustrates a diffusion-contingency model of government accounting for application in developing countries as developed by Godfrey, Devlin & Merrouche (1996).

Figure 4.6: Diffusion-Contingency Model for Government Accounting



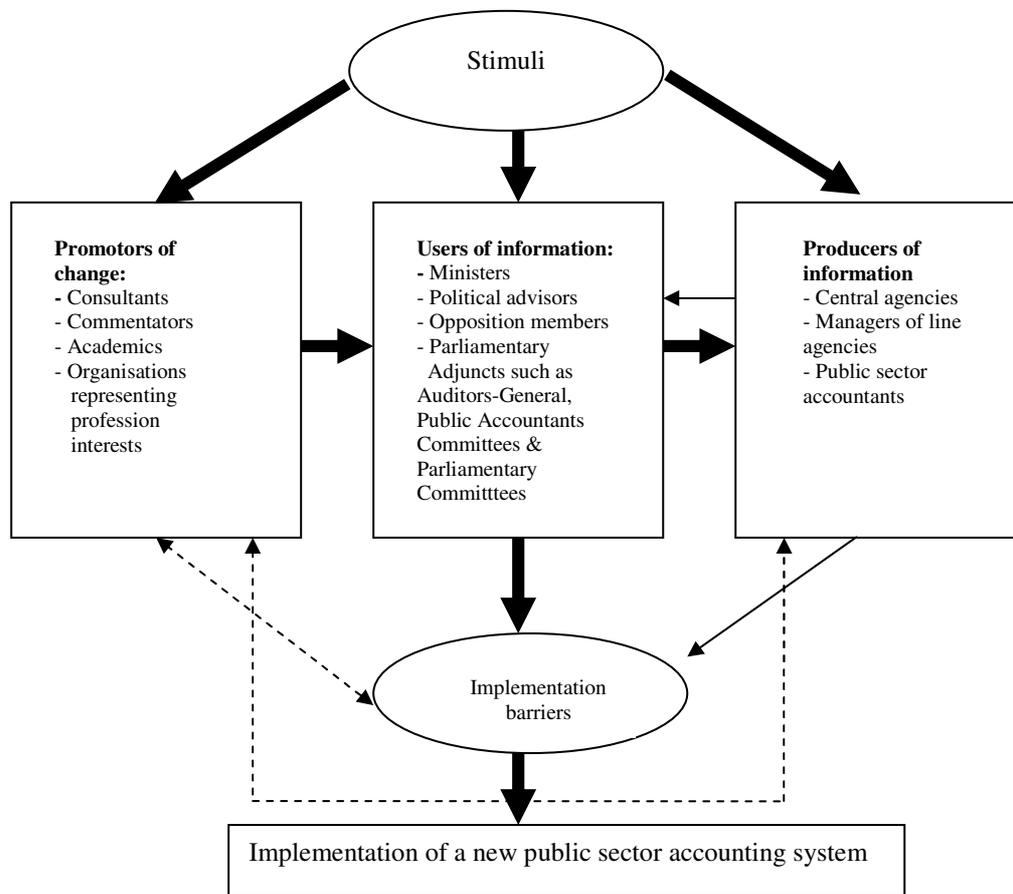
(Source: Godfrey, Devlin & Merrouche 2001 p. 282)

The initiation phase includes two stages: agenda-setting and matching. At the stage of agenda-setting the agent can directly or indirectly influence the change. For example the International Monetary Fund (IMF), the World Bank and other aid donors can act directly as change agents. Godfrey, Devlin & Merrouche (2001) found that IMF promoted structural adjustment policies which were direct stimulus to social, economic and political change in developing countries. At the matching stage Godfrey, Devlin & Merrouche (2001) noted that the public agency needs to identify the problem and match the accounting practice to their organisation's characteristics.

The implementation phase included three stages: re-invention, clarifying and routinizing. The re-invention stage is a part of matching stage to adjust or re-structure the system for full implementation of accounting innovation. The clarifying stage is the stage where there needs to be a clear understanding of the accounting change. The routinizing stage is when people in the organisation accept accounting changes as being routine work rather than new work. Godfrey, Devlin & Merrouche (2001)'s model helps in understanding the diffusion of government accounting innovations in developing countries.

Further adaptations of Luder's model were undertaken by Christensen (2002) who investigated the process of accounting change in the New South Wales State Government of Australia. Christensen (2002) focused on the history of the reform process and placed emphasis on the key actors of change. Christensen's (2002) identified three groups of key actors: (1) promoters, (2) producers of information and (3) users of information. The groups respond in part to each other but also react to stimuli for change whilst taking into account barriers which may hinder the change.

Figure 4.7: Process Model of Public Sector Accounting Change



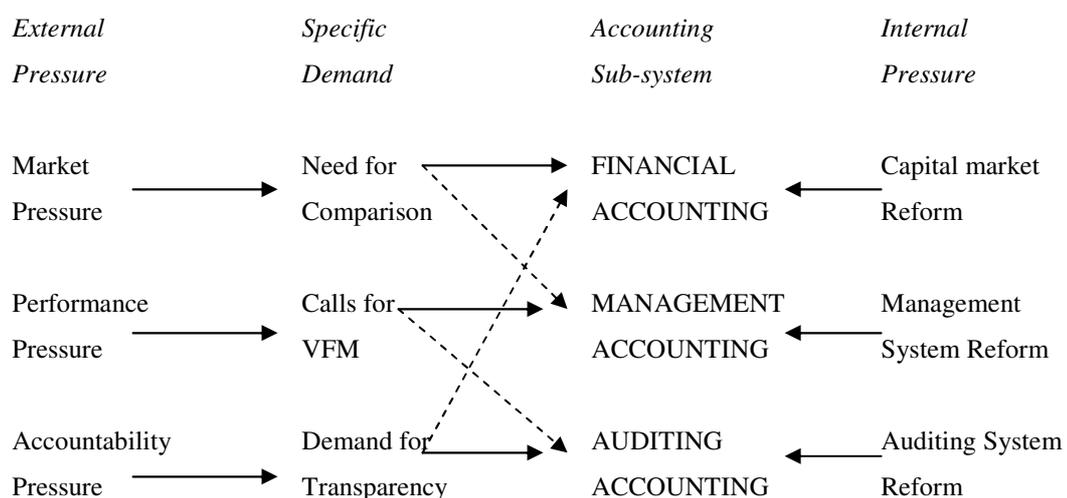
(Source: Christensen 2002 p. 99)

Christensen’s adapted model identifies that the stimuli for change can come from those both inside and outside the organisation. Change can be promoted by people and organisations with a vested interest in wanting change. Or it can be stimulated by the producers of information such as public servants in central agencies and government agency managers (CEOs, accountants, line managers). Also change can be stimulated by the users of information such as the politicians holding responsibility for individual portfolios or whole-of-government, as well as Opposition politicians and Parliamentary adjuncts such as the Auditors-General Public Accounts Committees and Parliamentary Committees. However, despite the desire for change, there can be implementation barriers such as characteristics of the public sector itself and its accounting system that can restrict the options available to implement change. Christensen (2002) found that the role of promoters of change was very important at the implementation stage of the change process. Christensen acknowledges that a critical factor in the NSW project was

the consultant's claims to expertise. These arguments support Hood (1995) who described the consulting firm's role in the change process as that of promoter of change.

Additionally, Yamamoto (1999) has applied the contingency model to Japanese local government and has identified how different factors influence the need for different types of accounting change. Figure 4.8 shows the interrelation between internal and external pressure and the accounting sub-system required to satisfy the needs of the users and preparers of the information. This model helps in understanding the reform drivers for different types of accounting change in the public sector.

Figure 4.8: Interrelation between Pressure for Accounting Change and Accounting techniques adopted



(Source: Yamamoto 1999, p. 301)

From figure 4.7, it can be seen that Yamamoto (1999) focused on specific contingency variables both external and internal. There are three external factors; market pressure, performance pressure and accountability pressure. The first pressure is performance pressure which leads to the need for information to assess whether the public sector is getting value for money for resources used. This leads to the need for a management accounting system to provide the necessary costing information to make such an assessment. The second one is accountability pressure which leads to demands for transparency of government activities. The way to fill transparency needs is reforming the financial accounting system and having an auditing system. The last pressure is market pressure which leads to the need for comparative data.

Yamamoto (1999) found that external pressures are seen to translate into specific demands for comparative data, enhanced transparency and assessment of value for money. The main internal pressures are government policy demanding results-oriented management which in turn provides support for the external demand for value for money.

Therefore, Lewin's change model helps to understand the stages of change (analysis, action and review-) and also can be applied to understand the process of accounting change modelled by Luder (1992) and Innes & Mitchell (1990). There have been numerous studies which support the variables identified in the models above. A discussion of some of these studies follows.

Accounting change research using contingency theory has been undertaken in developing countries (Kattan, Pike & Tayles 2007; Marwata & Alam 2006; Phadoongsitthi 2005). Kattan, Pike & Tayles (2007) used the contingency theory framework to investigate management accounting practices in Palestine. The uncertainty of political change in Palestine which precipitated change in markets and their structure was used as a contingent variable. It was found that political uncertainty was a major driver for change in management accounting and control systems. Kattan, Pike & Tayles (2007) recommended that management accounting in developing economies cannot be understood without reference to the wider political, cultural and economic factors of the country. This supported previous studies such as Hopper (2000); Luder (1992) and Luther & Longden (2001) mention that environmental factors occur in initial stages of accounting change. Waweru, Hoque & Uliana (2004) reinforce that economic issues and global competition are drivers for government reform which in turn may lead to accounting reform.

Haldma & Laats (2002) investigated the factors influencing the management accounting change in Estonian manufacturing companies. They found that a change was associated with both external and internal contingencies such as tightening of competition and organisational size. The finding of Haldma & Laats (2002) introduces possible new drivers and barriers, such as the legal accounting environment and shortage of qualified accountants as factors influencing and affecting management accounting change in Estonian manufacturing companies. Haldma & Laats (2002) identified the following

changes to the cost accounting system: segment costing, cost allocation, product costing, variable costing and Activity Based Costing. These changes were necessary for improved cost information to deal with the competitive environment in Estonia, a developing country.

Waweru, Hoque & Uliana (2004) studied accounting change, using a contingency theory framework, in South African retail companies. The findings identified that both internal and external factors were responsible for changes in the management accounting system. Waweru, Hoque & Uliana 2004 (2004) found that economic issues and global competition were two main contingent factors which led to the development of new government policy for retail companies in South Africa. This shows that external pressure led to the need for improved accounting information for internal control. However, the lack of funding to support the change, the employees' attitude which was either against the change or in fear of change, acted as barriers to a successful accounting change in South Africa retail companies.

Phadoongsitthi (2005) has applied a contingency theory framework to study the impact of culture on management accounting practices in private organisations in Thailand, India and Australia. The study found that Australian organisations adopt new management accounting techniques more than organisations in Thailand and India. Thailand and Indian organisations are more similar in the use of accounting techniques than Thailand and Australia. Phadoongsitthi's (2005) suggests that this is due to the similarity of culture between Thailand and India and also limitations in developing countries due to the lack of training of, or expertise in, management accounting practices. Phadoongsitthi's (2005) results supports the work of Otley (1998) who found different countries may bring about accounting change in different ways. Phadoongsitthi's findings also support Morakul (1999) who identified national culture as a contingency variable and found that power distance of culture influenced the success of ABC implementation in the Thai private sector. This is because there is high power distance in Thailand and Thai people accept external locus of control by more powerful others as the norm. Therefore, culture can be a contingent factor that might influence the success of implementation of new accounting techniques.

Additionally, other studies have been conducted to determine whether effective management accounting practices in one country can cause success or failure when applied in another country (Otley 1980; Kattan, Pike & Tayles 2007; Morakul 1999). Several studies by Perera (1989) suggest that transferring accounting skills from one country to other countries may not succeed due to cultural irrelevance such as transferring accounting skills from an Anglo-American to a developing country. This supports Hofstede (1980) who found peoples from different nations have differing attitudes toward and reactions to management controls and practices.

Robinson and Harun (2004) researched government accounting reform in Indonesia. The contextual variables they identified can be placed into several categories: stimuli, promoter of change, and implementation barrier. Robinson and Harun (2004) found that the policy makers were mentioned in the initial stage of the change, as they had been looking at reforming government accounting in Indonesia since 1992, and then with the 1998 economic crisis more powerful stimuli for the change came about. These seem to support contextual variables that influence accounting reform as identified in Luder's Model and Christensen's adapted model. Moreover, barriers to the reform process included: lack of qualified accounting staff, lack of interest by parliament and the citizens and failure to establish an independent public sector accounting standard setting body. This suggests that the lack of strong support from the producers of information and users of information may lead to failure of government accounting reform.

Saleh (2007) used Luder's classification of national context such as producer of information and user of information to identify factors influencing government accounting change in Malaysia. Three contextual variables were identified: distribution of political power, legal tradition and existence of a professional body. Saleh (2007) found that a low degree of legal codification for governmental accounting and weak professional involvement influenced accounting change in Malaysia. As noted by Luder (1992) government accounting change can be influenced if there is enough stimulus from both the accounting professions, which has advisory responsibilities, and accountants with knowledge of private sector accounting.

Other studies have focused on barriers to change by raising questions about why new accounting techniques had not been adopted. Olorilanto (2008) used Luder's

contingency model to examine why accrual accounting is still unknown by Malagasy's municipalities despite it being introduced in 2005. Olorilanto (2008) found a lack of effective communication between the civil servants and the accounting professionals. The national body of accounting regulators had developed accounting standards without understanding the needs of civil servants. The lack of political commitment to change government accounting in all levels of government led to a lack of acceptance of the benefits of accrual accounting (Olorilanto 2008). It also found that civil servants in both central government and municipalities were not motivated to implement the accounting reform (Olorilanto 2008) which also would have made it difficult to convince other stakeholders to support the process of accounting reform. This reinforces the role of policy makers in supporting the change process.

Additionally, Lye, Perera & Rahman (2005) investigated accounting change in the New Zealand public sector which transformed its financial accounting system from cash based to accrual based. Lye, Perera & Rahman (2005) emphasised six antecedents of the change: key people, axial principles, communicating ideas, contextual determinants, ethos, and knowledge. Key people acted as champions for change and were focused on the desired outcome. Axial principles refer to the commitment to basic concepts and principles which participants considered made the reform process in New Zealand at the time more comprehensive than anywhere else in the world. Communicating ideas whereby people, using various means to convey ideas, information, intentions, and plans to gain support and manage the process of change. Contextual determinants were circumstances or events relevant within the New Zealand context, which exerted an influence on the synergistic process of change. The term ethos captures the idea that people came together united by a receptive attitude to reform to form a community, representing different organisations. Knowledge referred to theoretical knowledge, experiential knowledge and precedent. All six antecedents of change converged to contribute the synergistic process of change which led to policy changing. For example Lye, Perera & Rahman (2005) found the interaction within historical, economic political and social objectives of New Zealand influenced the change from cash to accrual based accounting. This change is expected to provide more relevant information for government decision making and to achieve ministerial control (Lye, Perera & Rahman 2005). Therefore, Lye, Perera & Rahman (2005) supports prior studies (Christensen 2002; Cobb, Helliard & Innes 1995; Hopwood 1998; Innes & Mitchell 1990) that

identified factors influencing accounting change from a managerial, economic and social perspective.

Moreover, Jackson & Lapsley (2003) and Lapsley & Wright (2004) investigated management accounting innovations change in the UK public sector focusing on local government, government agencies and the healthcare sector. The findings show that government pressure was the main reason for the accounting change. Also training, seminars/conferences, publications by government and their professionals acted as communicators promoting accounting innovation in the public sector.

It may be concluded that previous studies confirm contingent factors influence accounting change in organisations and highlight that due to the differences in organisations and the external pressures influencing change that new and different contingent factors will affect changes to an organisation's accounting practices. Also it highlights that country specific factors are also important contingent variables (Lye, Perera & Rahman 2005).

Table 4.1 illustrates the drivers for, barriers to and facilitators of change in different countries as outlined in the studies.

Table 4.1: Driver for, Barriers to and Facilitators of Change

Authors	Stimuli and Drivers	Barriers	Facilitators	Type of Accounting/ Accounting technique	Country
Luder (1990) German version Luder (1992) English version	<ul style="list-style-type: none"> - Situation of financial problems - Financial Scandal -Capital Market - External standard setting - Professional Interest - Users of information - Producers of information - Social variable - Political variable - Administrative culture 	<ul style="list-style-type: none"> - Organisational Characteristics (decentralization or centralization) - The legal system - Qualification of accountancy staff - Size of Jurisdiction (population size and number and size of government agencies) 	<ul style="list-style-type: none"> - Users of Information - Producers of Information 	- Government accounting innovation	Canada Denmark Sweden France United Kingdom United States
Luder (1994)	<ul style="list-style-type: none"> - Fiscal Stress (serious shortage of public financial resources) - Financial Scandal - Dominating Doctrine - Social variable - Political variable - Administrative culture 	<ul style="list-style-type: none"> - Legal system - Size of Jurisdiction - Staff Qualifications 	<ul style="list-style-type: none"> - Users of Information - Producers of Information 	- Government accounting innovation	Italy Japan Spain
Luder (1996)	<ul style="list-style-type: none"> -Cultural, political and economic: Internal factors External impacts Diffusion (Esp. the change of dominating doctrine) 	<ul style="list-style-type: none"> - System of Values - Modes of thought - Content of accountability - System of education - Legal system - Shape of jurisdiction 	<ul style="list-style-type: none"> - Users of Information - Producers of Information 	- Government accounting innovation	

Table 4.1 Drivers for, Barriers to and Facilitators of Change (Continues)

Authors	Stimuli and Drivers	Barriers	Facilitators	Type of Accounting/ Accounting technique	Country
Godfrey, Devlin & Merrouche (1996)	<ul style="list-style-type: none"> - Stimuli Fiscal stress Financial scandal Political Participation - Societal structural variables Societal Regional International reputation International organized pressure Groups - Political structural variables Political culture/system Political competition - Administrative structural variables Administrative culture Staff Formation system Standard Setting Objectives 	<ul style="list-style-type: none"> - Staff Qualifications - Aid Distortion 	<ul style="list-style-type: none"> - Users of Information - Producers of Information 	- Government accounting innovation	Kenya Tanzania Uganda
Jaruga & Nowak (1996)	<ul style="list-style-type: none"> - Cultural, political and economic: Internal factors External impacts Diffusion - User of information - User and producers of information - Behaviour of administrative actors 	<ul style="list-style-type: none"> - system of values - modes of thought - content of accountability - System of education - Legal system - shape of jurisdiction 	<ul style="list-style-type: none"> - Users of Information - Producers of Information 	Government accounting	

Table 4.1 Drivers for, Barriers to and Facilitators of Change (Continues)

Authors	Stimuli and Drivers	Barriers	Facilitators	Type of Accounting/ Accounting technique	Country
Yamamoto (1999)	<ul style="list-style-type: none"> - Market pressure - Performance pressure - Accountability pressure 	<ul style="list-style-type: none"> - The degree of codification of public finance and accounting law - The absence of a Chief Financial Officer responsible for governmental accounting - The lack of general accounting skills of government accounting staff 		<ul style="list-style-type: none"> - Financial accounting (accrual based) - Management accounting (cost accounting) - Auditing 	Japan
Bogy & Helden (2000)		<ul style="list-style-type: none"> - Lack of budgetary pressure - insufficient commitment by top management - too little attention paid to enablers of the change process 			Netherlands
Godfrey, Devlin & Merrouche (2001)	<ul style="list-style-type: none"> - Stimuli Cultural Political Economic - Social actors - Political actors - Administrative actors 	<ul style="list-style-type: none"> - Culture - System of values - Aid distortion - Content of accountability Education system Legal system Shape of jurisdiction 	- Promoters of change	- Government accounting innovation	Albania
Christensen (2002)	<ul style="list-style-type: none"> - Promoters of change - Producers of information - Users of information 	<ul style="list-style-type: none"> - Low level of accounting skill (in the private sector) - poor asset records - the absence of public sector accounting standards was a problem 	<ul style="list-style-type: none"> - Promoters of change - Producers of information - Users of information 	- Accrual accounting	Australia

Table 4.1 Drivers for, Barriers to and Facilitators of Change (Continues)

Authors	Stimuli and Drivers	Barriers	Facilitators	Type of Accounting/ Accounting technique	Country
Lye, Perera & Rahman (2005)	<ul style="list-style-type: none"> - Key people - Axial principles - Communicating ideas - Contextual determinants - Ethos - Knowledge 	<ul style="list-style-type: none"> - Key people - Axial principles - Communicating ideas - Contextual determinants - Ethos - Knowledge 	<ul style="list-style-type: none"> - Key people - Axial principles - Communicating ideas - Contextual determinants - Ethos - Knowledge 	- Accrual accounting	New Zealand
Venieris & Cohen (2004)	NPM reform (To increase the efficiency and effectiveness of public administration and to assess the degree of efficient use of the resources allocated to each public organisation)	<ul style="list-style-type: none"> - Lack of control over subsidies (the Ministry of Finance did not have the jurisdiction to enforce change in the university) - Lack of commitment - Lack of resources - Lack of appropriate software package - Lack of significant staff - Lack of key people promoting the change - Bad planning 		<ul style="list-style-type: none"> - Accrual accounting - Cost accounting - Budgeting 	Greece
Robinson & Harun (2004)	International pressure NPM reform Decentralisation Economic and political trend	<ul style="list-style-type: none"> - Lack of qualified accounting staff - Lack of interest by parliament and citizens (Promoters and users of information) - Granting of powers to local government and failure to establish an independent public sector accounting standard setting body 	Promoters of change (President Soeharto's resignation in 1998)	- Accrual accounting	Indonesia

Table 4.1 Drivers for, Barriers to and Facilitators of Change (Continues)

Authors	Stimuli and Drivers	Barriers	Facilitators	Type of Accounting/ Accounting technique	Country
Saleh (2007)	NPM reform Financial crisis	- A low degree of legal codification - strong executive and weak professional influence - lack of accountants with knowledge of private sector accounting	The political promoters	- Accrual accounting	Malaysia
Rakoto Harimino Olorilanto (2008)	NPM reform Financial crisis	- Lack of effective communication between the civil servants and the professional body - Lack of political commitment	The political promoters	- Accrual accounting	Malaysia

It can be concluded that accounting change models in both the public and private sectors have identified similar contingent variables. The models focus on understanding the causes of change, the drivers of change, the facilitators of and barriers to change. Motivators, catalysts (Innes & Mitchell, 1990) and stimuli (Luder 1992) are events that happen at the initial stage of change. Producers of information, users of information (Luder 1992) and leaders of change (Cobb, Helliard & Innes, 1995) assist in driving the change process. The facilitators of change and barriers to change assist in effecting the success of the change process (Cobb, Helliard & Innes 1995; Kasurinen 2002; Luder 1992; Innes & Mitchell 1990).

This current study proposes to apply a contingency model to investigate accounting change in the Thai context with a focus on the Thai public universities. The contingent factors are divided into two general groups: external pressures and internal pressures. This study will investigate the contingent factors, which might influence accounting change in Thai public universities. For example, accounting change can occur as a response to external pressure such as economic pressure, market pressures, government laws, technology, stakeholder expectations and social or political change. Internal pressure can occur such as a change in the power dynamics of the university, a change to deal with a process of behavioural problem, or a change in the size and complexity of the university. Moreover, this current study will also look at factors that can be facilitators of and barriers to change as identified in previous studies (Christensen 2002; Kasurinen 2002; Luder 1992; Lye, Perera & Rahman 2005; Robinson & Harun, 2004; Saleh 2007; Venieris & Cohen 2004). Additionally, this current study will refer to the work of Jackson and Lapsley (2003) and Lapsley & Wright (2004) to investigate the diffusion of accounting techniques in the public sector.

4.8 Institutional Theory

Other studies have used institutional theory to provide an understanding of the role of accounting change in the society and organisations (Brignall & Modell 2000; Bogt 2008; Burns & Scapens 2000; Burns & Baldvinsdottir 2005; Hoque & Alam 1999; Jarvinen 2006; Lapsley 1994; Ribeiro & Scapens 2006; Scapens 1994; Soin, Seal & Cullen 2002).

Scapens (1994) considers accounting practice as stable rules and routines which generate stability in today's working (day-to-day) organisational behaviour by providing the institutional basis for decision-making. Burns & Scapens (2000) used institutional theory to develop a conceptual framework for accounting change. Institutions influence the change of routines and then new routines become institutionalized and then can become a part of the institution. The framework recognizes that accounting practice can both shape and be shaped by the institutions which manage organisational activity. They explore the relationship between accounting and organisation rules and routines as a practice, and how the accounting practices can become routines. Burn & Scapens (2000) noted that the achievement of accounting change will be easier if new routines (accounting practice) are consistent with existing routines rather than routines that challenge previous routines.

Burns (2000) investigated the role of power and politics as facilitators and/or as barriers to change. Burns (2000) noted that people/authorities with power facilitate accounting change in institutions, but note that the power of developed ways of thinking can also work against such change. Soin, Seal & Cullen (2002) used institutional theory to examine the role of management accounting, specifically ABC in a UK multinational bank within intra-organisation change and based their work on Burns & Scapens (2000). Soin, Seal & Cullen (2002) identified the need for ABC implementation in the Bank as a routine. The result suggested the ABC team succeeded in institutionalizing a version of ABC that revealed new links between costs and products but did not transform the strategic thinking of the banks's senior management. This is due to the banks's senior management misunderstanding the value of additional accounting information which in turn restricted the institutional change (Soin, Seal & Cullen 2002).

Further a study by Burns & Baldvnsdottir (2005) found institutional contradictions which can generate potential openings for accounting change. Burns & Baldvnsdottier (2005) emphasize that institutional contradictions question the existing institutional organisation. For example accounting information was an important tool in terms of questioning the prevailing institution because it exposed the technical contradictions between new business conditions and the institutionalized research/marketing orientation of the organisation.

Busco, Riccaboni & Scapens (2006) extended the institutional framework with an investigation of General Electric (GE) an Italian company. Busco, Riccaboni & Scapens (2006) found that management accounting practice helped employees to make sense in terms of transforming to a new organisation. For example crisis arises and a radical change is suggested, accounting practices enabled GE actors to respond to this need of change but those responses may be guided by either existing routines or rational deliberation.

Additionally, in the public sector, Brignal & Modell (2000) examined management accounting change in a public organisation by utilizing the institutional theory concept of decoupling. The concept of decoupling refers to accounting practices as features that can legitimize an organisation (Brignal & Modell 2000). Brignal & Modell (2000) found conflicting institutional pressures within the public sector that caused barriers to change. For example different parts of specific performance measurement system are a rational response to inconsistent stakeholder interest. For example funding bodies are interested in financial results and resources but professional groups are focused on innovation and quality. Brignal & Modell (2000) noted that managers will rely more heavily on financial performance measures when funding bodies exert institutional pressures for conforming efficiency.

Bogt (2008) explored management accounting change by using institutional theory in Dutch local government. Bogt (2008) emphasises an organisation's environment, such as the social and cultural aspects of the rules, knowledge, power, interests, standards, and habits in a particular group or society influence management accounting change. Bogt (2008) noted that change in the external institutional environment such as budget reduction made a requirement for the introduction of accrual accounting and outcome budgets. In addition there were changes to the budget rules in Dutch local government. Bogt (2008) found that organisational culture is an important element in the internal institutions, as it may heavily influence the beliefs, values, and practices of participants. For example accrual accounting and output budgets was introduced more than twenty years ago but the respondents to the study from local government reported that it was difficult to implement and required a lot of paperwork. The respondent's opinions also indicate that they had a negative attitude towards the change. Bogt's (2008) finding suggests that employee's attitudes were barriers to change.

Management accounting change research can be found not only in the private sector but also in the public sector (Baird 2007; Clarke & Lapsley 2004; Cohen, Kaimenaki & Zorgios 2007; Lapsley 1999; Venieris & Cohen 2004; Yamamoto 1999). Contingency theory was an original concept to understand the process of accounting change in organisation (Hopwood 1989; Luder 1992, Innes & Mitchell 1990; Otley 1980). Institutional theory has been seen as an option to investigate accounting and organisation change with focus on the institutional perspective (Bogt 2008; Burns & Scapens 2000; Scapens 1994; Soin, Seal & Cullen 2002). Institutional theory has been proposed as a framework to understand the process of accounting change within organisations and is dependant on internal institutions factors. Change in management accounting practice can be explained by a process of institutionalization that begins with a triggering event (stimuli) for change within organisation. Therefore, a combination of institutional theory and contingency theory provides the understanding as to the process of change in that not only institutional factors but also environmental factors influence accounting change.

4.9 Conclusions

This chapter reviews the literature on accounting change from both a private and public sector perspective. Contingency theory has been used to understand the process of change. Accounting change models help in understanding drivers for, facilitators of and barriers to change. Accounting and organisational change within organisations can be caused by many different factors and the change models discussed in this chapter are intended to explain in similar ways the relevance of the various variables in the reform process. The change models developed by both the private and public sector have similar ideas of accounting change practice. Institutional theory was discussed as an alternative approach to understand change within an organisation. The next chapter aims to apply the accounting change model to aid the understanding of accounting change in Thai public universities.

Chapter 5

A Theoretical Framework for Accounting Change

5.1 Introduction

The previous chapters provide the literature review relating to factors which influence accounting change. Chapter 2 provided a background of accounting reform in higher education. Chapter 3 focused on corporate governance, new public management (NPM) and organisational change and provided a discussion of factors that motivate and act as catalysts for accounting change. Chapter 4 introduced accounting change models highlighting accounting reform in the public sector. The purpose of this chapter is to develop a theoretical framework for use in understanding the research phenomena.

5.2 Conceptual Framework of Current Study

In keeping with the research questions outlined in chapter 1, this current study examines the factors that have influenced Thai public universities to implement accounting change. It also explores factors that can be barriers to and facilitators of accounting change and further focuses on an investigation of management accounting techniques, focusing on costing, used in Thai public universities. It also examines whether there are differences in the characteristics of Thai public universities that may affect accounting change.

5.2.1 Integration of Theory Used: A Theoretical Framework of Accounting Change

Scapens (1994) and Shields (1997) have identified that changes in the external environment cause organisations to change, which in turn cause changes to accounting practices. As noted by Hopwood (1987) “*accounting can be seen as being actively drawn upon in the construction of new organisational forms and boundaries*”. In the following sections discussion will focus on how organisational change can lead to accounting change and from this the research questions will be developed for this current study.

5.2.2 Corporate Governance and New Public Management (NPM)

Corporate governance is “concerned with structures and processes for decision-making and controls behaviour that support effective accountability for performance outcomes” (Barret 1997). In the public sector the focus of corporate governance is on the need for transparency, efficiency, effectiveness and value for money (Baird 2007; Clark & Lapsley 2004; Cohen, Kaimenaki & Zoraios 2007; Hood 1995; Venieris & Cohen 2004; Yamamoto 1999). New Public Management (NPM) is used to describe the change in management practices of the public sector in line with private sector practice (Francesco, 2001; Hood, 1995; Painter, 2006). NPM can be regarded as a functionalist approach, in that one of the most important objectives of the changes it proposes is to increase economic efficiency and effectiveness in the public sector (Bogt 2008; Brignall & Modell, 2000; Hood 1995; Jarvinen 2006; Lapsley 1999; Lapsley & Pallot 2000; Scharcter 2000; Yamamoto 1999). For the public sector to meet the NPM objectives of increased accountability and transparency, it is also necessary for the accounting practices used to provide the information necessary to meet such objectives (Baird 2007; Clarke & Lapsley 2004; Cohen, Kaimenaki & Zoraios 2007; Hood 1995; Venieris & Cohen 2004; Yamamoto 1999).

5.2.3 Contingency Theory

Contingency theory is concerned with an organisation’s environment, its structure and its technology (Hopwood 1987; Innes & Mitchell 1989; Luder 1992; Otley 1980). It suggests that an organisation’s accounting practice is based on specific conditions in which the organisation will align its systems to suit the contingencies facing it. This implies that a one size fits all model is not appropriate. Innes & Mitchell (1990) argue that “there is no unanimity on the set of contingent variable affecting firms, and operational definitions of many of these variables have proved problematic”. In relation to accounting contingency theory suggests that an organisation’s accounting practice will be based on the specific conditions in which the organisation finds itself and that there is no appropriate accounting system which can be applied to all organisations. The success of accounting practice depends on the ability of the organisation to adapt to changes in both its external and internal environment (Otley 1980).

Hopwood (1987) used the contingency theory to identify factors that can influence accounting change such as the power of economic and market forces, the role of new technology, the form of the organisation and the idea in bodies of knowledge (Hopwood 1989). Waweru, Hoque & Uliana (2004) identified global competition and change in technology as external contingent variables influencing management accounting change. Cobb, Helliard & Innes (1995) agreed that environmental pressures were the primary reasons for many of the accounting changes but they stated that internal factors were also important.

This study investigates the contingent variables, which might influence accounting change in Thai public universities. For example, accounting change can occur as a response to external pressure such as: economic pressure (Hopwood 1987; Luder 1992; Yamamoto 1999), market pressures (Cobb, Helliard & Innes 1995; Hopwood 1987; Innes & Mitchell 1990; Yamamoto 1999); and government laws technology, stakeholder expectations and social or political change (Godfrey, Devlin & Merrouche 1996; Luder 1992). Internal pressure may also cause a need for accounting change, such as: a change in the power dynamics of the university process or behavioural problems; or a change in the size and complexity of the university (Scapens 1994). The following section will develop the conceptual framework for the study and the research questions.

5.3 Conceptual Framework for Accounting Change Model

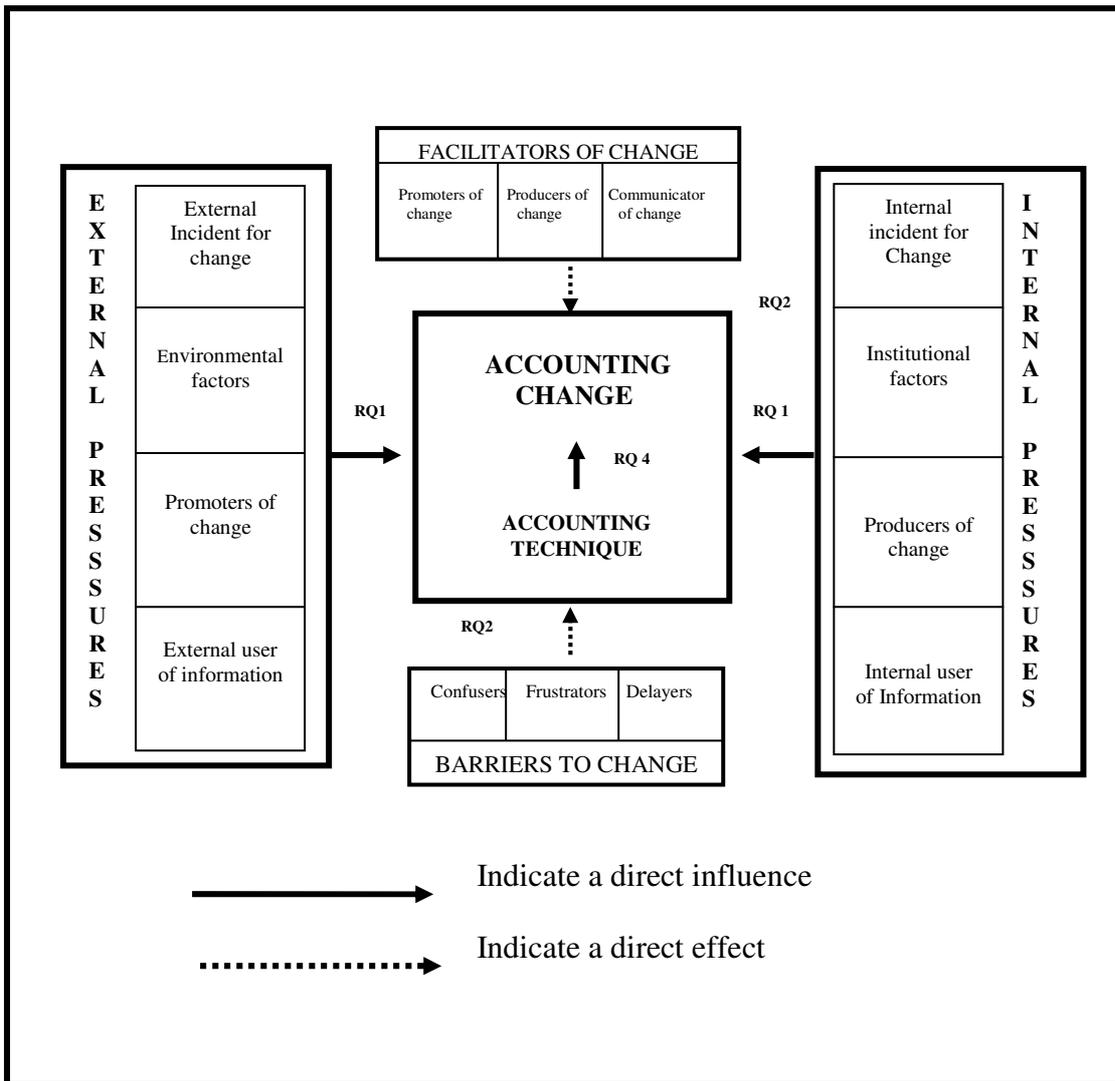
The current study extends the accounting change literature by integrating previous research findings from both the private sector and public sector (Cobb, Helliard & Innes 1995; Christensen 2002; Godfrey, Devlin & Merrouche 2001; Hopwood 1987; Innes & Mitchell 1990; Jackson & Lapsley 2003; Kasurinen 2002; Lapsley & wright 2004; Luder 1992; Yamamoto 1999).

The original model of accounting change for the public sector was developed by Luder (1992) and is based on contingency theory. The model focuses on both the external and internal factors affecting the change process to aid the understanding of the stimuli influencing government accounting reform, and to measure its success or failure. The contingency model identifies contextual and behavioural variables potentially relevant

in explaining the outcome of the government accounting innovation process (Monsen & Sasi 1998). Many researchers have applied Luder's model and contingency theory in different countries and in different government agencies (Christensen 2002; Godfrey, Devlin & Merrouche 2001; Robinson & Harun 2004; Saleh 2007; Yamamoto 1999). Yamamoto (1999) focused on factors that influence specific types of accounting change. Godfrey, Devlin & Merrouche (2001) made modifications to the change models by highlighting factors influencing accounting change in developing countries. Christensen (2002) stresses the importance of key actors of accounting change. Additionally, this study has also incorporated the accounting change model in the private sector developed by Innes & Mitchell (1990), adapted by Cobb, Helliear & Innes (1995) and extended by Kasurinen (2002). Innes & Mitchell (1990) stress three types of factors - motivators, catalysts and facilitators to explain the causes of accounting change. Cobb, Helliear & Innes (1995) emphasized the role of individuals as leaders in the change process. Kasurinen (2002) focuses on the barriers to change by dividing the barriers into three subcategories: confusers, frustrators and delayers.

The contextual variables of accounting change in this study belong to several categories and are divided into five groups: 1) external pressures 2) Internal pressures 3) barriers to change 4) facilitators of change and 5) accounting system change. Figure 5.1 illustrates the change model to be used in this study. The model in this current study sees accounting change in Thai higher education from a contingent perspective. This study identifies the contingent factors both from the external environment and the internal environment that act as motivators and catalysts for accounting change. Additionally, the model includes potential barriers to and facilitators of change that might directly influence the success of accounting change.

Figure 5.1: Accounting Change Model in Thai Public Universities



Components of the model outlined in Figure 5.1 will now be examined in more depth.

1. External pressures refer to organisational environmental factors and people who can influence accounting change. This study breaks external pressures into: (1.1) external incident for change (1.2) environmental factors (1.3) promoters of change and (1.4) external users of information

1.1 External Incident for change: Luder (1992) refers to stimuli as events that happen at the first stage of the innovation process that generate a need for improved information on the part of the users of accounting information and increases the producer’s readiness to supply such information.

1.2 Environmental factors: are external factors such as an economic crisis, government laws, government push for improved governance, introduction of NPM practices, technology, market pressures, social, or political change.

1.3 Promoters of change: Christensen (2002) refers to promoters of change as people and organisations with a vested interest in wanting change. The current study divides promoters of change into two levels: macro and micro level. Macro level refers to International Funding Agencies (IMF, ADB and World Bank) while micro level refers to the authorities in Thailand who want government accounting information: The Comptroller's General Department, The Bureau of Budget and The Office of Higher Education and Commission under the Ministry of Education.

1.4 External users of information: Christensen (2002) refers to the users of information as politicians holding responsibility for individual portfolios or whole-of-government as well as Opposition politicians and Parliamentary adjuncts such as the Auditors-General Public Accounts Committees and Parliamentary Committees. The current study refers to external users of information: The Comptroller's General Department, The Bureau of Budget, The Development Commission Office (PDC) and The Commission on Higher Education under the Ministry of Education. Table 5.1 summarizes the contextual variables of external pressures for this study.

Table 5.1: Contextual Variable of External Pressures

<i>External pressures</i>	Contextual variable
<i>1.1 External Incident for change</i>	<ul style="list-style-type: none"> - Economic crisis - International donor pressure - Government law pressure
<i>1.2 Environmental factor</i>	<ul style="list-style-type: none"> - Government policy (New public management, corporate governance) - New Technology - Market pressure - Social system - Political system - Economic policy
<i>1.3 Promoters of change</i>	<ul style="list-style-type: none"> - International promoter level refers to International Funding Agencies (IMF, ADB and World Bank) and International consultant - Politician - National promoter level refers to the Thai government who sets the government and university accounting system (Comptroller’s General Department and The Office of Higher Education Commission under the Ministry of Education) and local consultants - Professional bodies - International Consultants - Domestic Consultants
<i>1.4 External users of information</i>	<ul style="list-style-type: none"> - International funding agencies - Parliament (such as auditor) and citizens - Comptroller’s General Department - Bureau of Budget - Development Commission Office (PDC) - Office of Higher Education Commission under the Ministry of Education. - Office for National Education Standards and Quality Assessment (Public Organisation) ONESQA

2. Internal pressures: refers to institutional factors or people who influence accounting change (Burn & Scapens 2000; Bogt 2008; Cobb, Helliard & Innes 1995; Scapens 1994). It includes: (2.1) internal incident for change (2.2) institutional factors (2.3) producers of information and (2.4) internal users of information

2.1 Internal Incident for change: Cobb, Helliard & Innes (1995) refers to internal motivations for change as pressures on financial results or individuals. In the current study internal incident for change refers to events that can occur at the initial stage within the university itself, for example, budgetary pressure and top management policy.

2.2 Institutional factors: Godfrey, Devlin & Merrouche (1996) refers to internal and external organisational characteristics: attitude towards change, centralization, complexity, formalization, high level of interconnectedness, consistency and system openness. In the current study, institutional factors refer to environment factors within universities that can lead to accounting change within universities. For example, a change in the power dynamics of the university, process or behavioural problems, or a change in the size and complexity of university, such as a public university becoming an autonomous university.

2.3 Producers of information: Christensen (2002) refers to producers of information as public servants in central agencies and government agency managers (CEOs, accountants, line managers). This current study views the producers of information as the top management of the university, staff in The Dean's office, The Head of School's office and the Chief Financial Officer (Comptroller).

2.4 Internal users of information: refers to the people who take responsibility for the whole organisation. The current study refers to internal users of information as the top management of the university (university committees), The Dean and The Head of School who all use the accounting information for university management. Table 5.2 summarizes all the contextual variables of internal pressures of this study.

Table 5.2: Contextual Variables of Internal Pressure

Internal pressure	Contextual variables
<i>2.1 Internal Incident for change</i>	<ul style="list-style-type: none"> - Budgetary pressure - Top management policy
<i>2.2 Institutional factors</i>	<ul style="list-style-type: none"> - Autonomous university pressure - University policy pressure (New public management, corporate governance) - The need for improving financial management system for university (dissatisfaction with traditional system) - performance measurement pressures - the need for accounting information for planning controlling and decision making - Change in the power dynamics of universities - Change to deal with a process of behavioural problems - Change in the size and complexity of universities - Change in accounting rules and routines - Attitude towards change
<i>2.3 Producers of change</i>	<ul style="list-style-type: none"> - Top management - Dean's office - Head of School's office - University accountant
<i>2.4 Internal users of information</i>	<ul style="list-style-type: none"> - The top management of universities - Dean - Head of School's office - Accountant of university

3. Accounting change and accounting techniques: Accounting change refers to changes in tools or techniques to produce financial and management accounting information (Jackson & Lapsley 2003; Lapsley & Wright 2004). Financial accounting changes such as the change from cash to accrual accounting, and management accounting change in relation to budgeting costing and performance measurement practices. Additionally, Yamamoto's model (1999) focuses on different factors that influence the specific type of accounting change (financial accounting, management accounting and auditing). In this current model the objective is to investigate not only whether the accounting system has changed, but also the accounting techniques used in Thai public universities. Table 5.3 summarises the accounting techniques which support each type of accounting system change.

Table 5.3: Type of Accounting and Accounting Technique

Type of Accounting	Accounting techniques
Financial accounting	Cash basis Accrual basis
Management accounting	Budgeting - Result base budgeting - Block grant Costing - Central cost control - Activity based costing (ABC) - Unit service cost Performance measurement - KPI - Balanced score card

4. Barriers to change: Luder (1992) refers to the implementation barriers as environmental conditions that hinder the process of implementation, thus hindering, and in extreme cases preventing, the creation of a more informative accounting system which is in principle desirable. The current study views the barriers to change as those outlined in the work of Kasuinen (2002) who divided the barriers into three subcategories: confusers, frustrators and delayers.

Table 5.4 summarise the barriers to government accounting change and relates these to previous studies.

Table 5.4: Barriers to Government Accounting Change

Authors	Barriers	Type of Barriers	Country
Luder (1992-1996)	<ul style="list-style-type: none"> - Organisational Characteristics (decentralization or centralization) - Qualification of accountancy staff - Size of Jurisdiction (population size and number and size of government agencies) - The legal system - Aid Distortion - Mode of thought - Content of accountability - System of education - System of value 	<ul style="list-style-type: none"> Confusers Delayers Delayers Frustrators Confusers Confusers Confusers Delayers Frustrators 	<ul style="list-style-type: none"> Canada Denmark Sweden France United Kingdom United States Italy Japan Spain
Luder (1992) Yamamoto (1999)	<ul style="list-style-type: none"> - The degree of codification of public finance and accounting law - The absence of a Chief Financial Officer responsible for governmental accounting - The lack of general accounting skills of government accounting staff 	<ul style="list-style-type: none"> Frustrators Frustrators Delayers 	<ul style="list-style-type: none"> Japan
Bogt & Helden (2000)	<ul style="list-style-type: none"> - Lack of budgetary pressure - insufficient commitment by top management - too little attention paid to enablers of the change process 	<ul style="list-style-type: none"> Delayers Frustrators Delayers 	<ul style="list-style-type: none"> Netherlands
Christensen (2002)	<ul style="list-style-type: none"> - Low level of accounting skill (in the private sector) - poor asset records - the absence of public sector accounting standards was a problem 	<ul style="list-style-type: none"> Delayers Delayers Frustrators 	<ul style="list-style-type: none"> Australia
Lye, Perera & Rahman 2005	<ul style="list-style-type: none"> - Key people (Key people defined as persons working towards a desired end) - Axial principles (The commitment to basic concepts and principles was what participants considered made the reform process in New Zealand at the time more comprehensive than anywhere else in the world) - Communicating ideas (The conceptual category of communicating ideas represents people using various means to convey ideas, information, intentions, and plans to gain support and manage the process of change) - Contextual determinants (Contextual determinants were circumstances or events relevant within the New Zealand context, which exerted an influence on the SPC) - Ethos (The term ethos captures the idea that people came together united by a receptive attitude to reform to form a community, representing different organisations) - Knowledge (theoretical knowledge, experiential) 	<ul style="list-style-type: none"> Delayers Frustrators Confusers Frustrators Confusers Delayers 	<ul style="list-style-type: none"> New Zealand

Table 5.4: Barriers to Government Accounting Change (Continues)

Authors	Barriers	Type of Barriers	Country
Venieris & Cohen (2004)	<ul style="list-style-type: none"> - Lack of control over subsidies (the Ministry of Finance did not have the jurisdiction to enforce change in the university) - Lack of commitment - Lack of resources - Lack of key people promoting the change 	<p>Delayers</p> <p>Delayers Delayers Delayers</p>	Greece
Robinson & Harun (2004)	<ul style="list-style-type: none"> - Lack of qualified accounting staff - Lack of interest by parliament and citizens (Promoters and users of information) - Granting of powers to local government and failure to establish an independent public sector accounting standard setting body 	<p>Delayers Frustrators</p> <p>Confusers</p>	Indonesia
Saleh (2007)	<ul style="list-style-type: none"> - A low degree of legal codification - strong executive and weak professional influence - lack of accountants with knowledge of private sector accounting 	<p>Confusers Frustrators</p> <p>Delayers</p>	Malaysia
Rakoto Harimino Olorilanto (2008)	<ul style="list-style-type: none"> - Lack of effective communication between the civil servants and the professional body - Lack of political commitment 	<p>Confusers</p> <p>Frustrators</p>	Malaysia

5. Facilitators of change: Facilitators of change refer to those contingent variables that enable the change to progress. These include the promoters of change (Luder 1992; Christensen 2002), producers of change (Christensen 2002; Godfrey, Devlin & Merrouche 1995) and other facilitators of change (for example communicators of change, technology, staffing, training etc.) (Cobb, Helliard & Innes 1995; Innes & Mitchell 1990; Jackson & Lapsley 2003; Kasurinen 2002; Lapsley & Wright 2004).

5.1 Promoters of change

Godfrey, Devlin & Merrouche (1996) emphasised that developing countries might change their accounting system to meet international aid agencies requirements. The demands of international aid agencies and donor agencies in providing assistance can directly or indirectly stimulate the change process due to funding conditions (Godfrey, Devlin & Merrouche 1996; Hood, 1995). Christensen (2002) found that the roles of promoters of change have supported the success of change.

5.2 Producers of change

Both Luder (1992) and Christensen's (2002) emphasise the producers of change as drivers of change, that respond in part to each other but also react to stimuli for change whilst taking into account barriers which may hinder the change.

5.3 Communicators of change

The key to the diffusion of new methods is the communication process and transferring knowledge about the accounting technique to others who do not have it (Van de Ven, 1996; Jackson & Lapsley 2003; Lapsley & Wright). The diffusion methods of accounting change have been seen to support the success of accounting change (Jackson & Lapsley 2003; Lapsley & Wright 2004). This study highlights the communicators of change as one of facilitators to the success of accounting change.

Lapsley & Wright (2003) note the role of communicators in government accounting innovation as facilitators of change. Facilitators of change also refers to the leader of change who agreed to the change and provided the necessary resources to support the success of accounting change such as the budget to fund the change process and information technology resources (Cobb, Helliard & Innes 1995; Innes & Mitchell 1990; Kasurinen 2002). Table 5.4 summarises the facilitators of change.

Table 5.5: Facilitators of Change

Facilitators	Factors
5.1 Promoters of change	<ul style="list-style-type: none"> - International promoter level is International Funding Agencies (IMF, ADB and World Bank) and International consultant - National promoter level is the Thai government who responding for setting the government accounting and accounting for universities (The Comptroller’s General Department and The Office of Higher Education Commission under the Ministry of Education) and local consultants - Professional bodies - International Consultants - Domestic Consultants
5.2 Producers of change	<ul style="list-style-type: none"> -The top management - The Dean’s office - The Head of School’s office - University accountant - University Staff - International funding agencies - Member of parliament (such as auditor) and citizens -The Comptroller’s General Department -The Bureau of Budget - The Development Commission Office (PDC) -The Office of Higher Education Commission under the Ministry of Education. - The Office for National Education Standards and Quality Assessment (Public Organisation) ONESQA
5.3 Communicators of change	<ul style="list-style-type: none"> - Training course - Professional publications - Seminars/conferences - Government publications - Auditors/consultants - Networking - Internet system information staff feedback - Budgeting - Computer systems - IT - Software - others facilities

5.4 The Theoretical Framework of Accounting Change in Thai Public Universities

The theoretical framework is further developed in the next section which leads to the research questions to guide the study. Figure 5.1 also links the research questions to the theoretical framework.

5.4.1 External and Internal Pressures

NPM literature suggests that the most important reason for changing the way the public sector is controlled the desire to improve performance and increase economic efficiency and effectiveness (Bogt 2008; Brignall & Modell 2000; Hood 1995; Jarvinen 2006; Lapsley 1999; Lapsley & Pallot 2000; Scharcter 2000; Yamamoto 1999).

Luder (1992) referred to stimuli to describe the events that occur to create a need for improved accounting information such as fiscal stress, financial scandal, and capital market pressure. In his study Yamamoto (1999) viewed external pressure coming from the environment and internal pressure was viewed from within the government system. Lapsley & Wright (2004) found that the most important reason to use a new accounting innovation in the public sector was due to government pressure forced mainly by legislation.

More importantly, this current study includes the concept of corporate governance as a motivation and catalyst for accounting change in the public sector. This enhances the idea of many authors such as Hood (1995), Bogt (2008), Jarvinen (2006) and Yamamoto (1999) who use new public management (NPM) as a pressure for accounting reform. This is because the concept of corporate governance helps in understanding why and how the public sector has changed their management practice.

This current study further argues that both internal and external pressures influence accounting change. Therefore, the current study investigates the most important external and internal pressures influencing accounting change in Thai public universities. The research question is:

“What factors influence accounting change in Thai public universities?”

5.4.2 Barriers and Facilitators of Accounting Change

5.4.2.1 Barriers to Change

Previous research has discussed barriers to accounting change (Christensen 2002; Godfrey, Devlin & Merrouche 2001; Cobb, Helliard & Innes 1995; Kasurinen 2002; Luder 1992; Mimba, Helden & Tillema 2007). Cobb, Helliard & Innes (1995) viewed factors hindering, delaying, or even preventing change as barriers. Changing priorities, accounting staff turnover and staff attitudes to change were indicated as examples of barriers. Kasurinen (2002) divided the barriers to change into three subcategories: confusers, frustrators and delayers. Confusers referred to uncertainty about the project's future role in the organisation and different views on change; e.g. the complexity of the project environment and the uncertain role of the proposed change in the organisation. Frustrators referred to existing reporting systems and organisational culture. Delayers referred to the lack of clear-cut strategies and inadequate information systems.

Moreover, Mimba, Helden & Tillema (2007) identified four factors that may be barriers to reform in the public sector in developing countries: (1) low institutional capacity (2) limited involvement of stakeholders (3) high levels of corruption and (4) high level of informality. Given Thailand is described as a developing country these barriers may assist in understanding the level of success of accounting change in Thai public universities. This led to the following research question:

“What factors can be barriers to the success of accounting change in Thai public universities?”

5.4.2.2 Facilitators of Change

Facilitators are those factors that influence the level of success of accounting change in a positive way (Christensen 2002; Cobb, Helliard & Merrouche 1995; Innes & Mitchell 1990). Christensen (2002) emphasises the role of three key actors to facilitate change: promoters of change, users of information and producers of information. Christensen (2002) found the role of consultants (promoters of change), politicians and auditors (users of information) and accounting staff (producers of information) as very important to support the success of accounting change. Based on the work of Christensen (2002), this study emphasises the role of these three key actors as facilitators of accounting change in Thai public universities.

A number of researchers emphasise the importance of communication in the accounting innovation process (Jackson and Lapsley 2003; Lapsley and Wright 2004; Van de Ven 1996). The key is the communication process and the transferring of knowledge about the accounting innovation to others who do not have it (Van de Ven 1996; Jackson & Lapsley, 2003; Lapsley & Wright). Jackson & Lapsley (2003) and Lapsley & Wright (2004) investigated methods of diffusion and found that training courses, professional publications, seminars, government publications were all very important facilitators. This is supported by Connor et al. (2004) who also identified training, communication between employees and knowledge gained from activities as facilitators of accounting change. Innes & Mitchell (1990) and Cobb, Helliard & Innes (1995) identified staff resources (producers of change), accounting computing resources (facilitators to change) and the degree of autonomy from the parent company (promoters of change) as strong factors facilitating change.

Moreover, Brown, Booth & Giacobbe (2004) examined factors which influenced the success of the adoption of new accounting techniques such as ABC. The result of Brown, Booth & Giacobbe's (2004) study found that top management support (users of information), internal champion support, organisation size and use of consultants (promoters of change) influenced the success of the accounting change. This study views facilitators of change as direct influences on the success of accounting change in Thai higher education. The following research question is put forward:

“What factors act as facilitators to the success of accounting change in Thai public universities?”

5.4.3 Accounting System Change and Accounting Technique

Based on the literature reviewed in chapters 2, 3 and 4, improved accounting techniques have been introduced into the public sector in line with NPM (Christensen 2002; Hood 1995; Lapsley 1999; Verieris & Cohen, 2004). Improvements in the quality of the accounting information due to the new accounting technique have improved the efficiency and effectiveness in the public sector (Christensen 2002; Hood 1995; Lapsley 1999; Verieris & Cohen 2004). For example measurements of costs and revenues have enabled more efficient and effective use of resources and better measurement of financial performance (Baird 2007; Venieris & Cohen 2004; Tambulasi 2007). The adoption of NPM approach will enable the increased demand for financial accountability in the public sector to be met by the provision of more up to date accounting information for decision making (Baird 2007; Hood 1995; Jackson & Lapsley 2003; Kattan, Pike & Tayles 2007; Pettersen 2001; Jarvinen 2006).

Financial accounting reform plays a central role in NPM (Baird 2007; Clarke & Lapsley 2004; Cohen, Kaimenaki & Zorgios 2007; Venieris & Cohen 2004; Yamamoto 1999). The accrual accounting model makes it possible to assess performance in items such as the total cost of government activities and services (Venieris & Cohen 2004; Tudor & Blidisel 2008). For many developing countries, the traditional method of accounting has been the manual cash based system. Such a system limits the amount of information available about costs of services and activities and therefore lessens the ability for performance assessment. Prior research has found that public sector reform needs modern management accounting techniques such as activity based-costing (Brown, Booth & Giacobbe 2004; Braid 2007; Baird, Harrison & Reeve 2004), balanced scorecard, key performance indicators (Andon, Baxter & Chua 2007; Kasurinen 2000; Waweru, Hoque & Uliana 2004) and budgeting target costing, function analysis, resource management and zero-based budgeting to control the public system and to adapt to the rapidly changing organisational and social environment (Jackson & Lapsley 2003; Lapsley & Wright 2004).

The development of costing techniques has been seen in the UK (Mitchell 1996), Spain (Valderrama & Sanchez, 2006), Italy (Arnaboldi & Azzone, 2004) and Australia (Jarrar, Smith & Dolley 200). The UK used ABC to support central cost allocation to universities (Mitchell 1996). Italy used ABC as a tool for benchmarking university departments (Arnaboldi & Azzone 2004). ABC provided valuable information for decision-making in Spanish universities (Valderrama & Sanchez 2006). Accounting techniques such as accrual based accounting has been introduced to Belgian higher education to measure academic assets and liabilities. In Greece accrual accounting, cost accounting and budgetary administration were introduced to increase the efficiency and effectiveness of Greek public university administration (Venieris & Cohen 2004). The implementation of accrual accounting in Romanian higher education has provided improved accounting information for decision making, performance measurement and benchmarking of departments (Tudor & Blisidel 2008).

Moreover, Jackson & Lapsley (2003) and Lapsley & Wright (2004) investigated the diffusion method of government accounting innovation in the public sector. Jackson and Lapsley (2003) found that accounting techniques have been used to support public sectors reform. For example ABC was used as a costing technique. Zero-based budgeting resource management and activity-based management were used as budgeting techniques. Balance scorecard and KPIs were used extensively as performance measurement tools in the public sector. These techniques were expected to improve performance measurement in the public sector reform and support organisational environment change. It was also expected that the public sector would be more transparent, accountable and provide service based on value for money in line with corporate governance and NPM reform. Therefore accounting techniques (innovation) acted as tools to support accounting reform in the public sector.

This suggests that accounting techniques may directly support accounting change. Therefore, accounting techniques are expected to directly influence accounting change. Based on this understanding, the follow research question is put forward:

“What new accounting systems and techniques have been adopted by Thai public universities?”

The main purpose of this research is to explore accounting change in Thai public universities focusing on both financial and management accounting. To further investigate and focus on management accounting technique, the next research question is put forward:

What are the factors that influence and affect the use of ABC in Thai Public Universities?

According to Lapsley & Wright (2004) the diffusion of accounting innovation can differ depending on the public sector unit (local authorities, government agencies and healthcare sector). In Baird's (2007) study the findings show that the degree of adoption of an accounting practice, in that case activity based costing, was dependant on the type of public sector unit (government business enterprises, government agencies, hospitals and universities). There are a number of factors that may differentiate the Thai public universities in this study. For example the type of university, whether or not it has autonomous status, the age of university and the size of university as measured by the number of campuses and the number of students. Based on the literature and discussions the following research questions will be used to explore this:

“Are there any university characteristics that may cause difference in the adoption of accounting practice?”

5.5 Conclusion

This chapter provides the conceptual framework to understand the process of accounting change. The current study adapted and applied the accounting change model from prior studies in both the public and private sectors. It aims to understand contingent factors which have influenced accounting change in Thai public universities such as the external and internal pressures, and the barriers to and facilitators of accounting change. Moreover, the accounting change requires the adoption of new or revised accounting techniques to support accounting change. This study will explore which techniques have been selected by Thai public universities. In the next chapter the research methodology used to conduct the study will be discussed.

Chapter 6

Research Methodology

6.1 Introduction

This chapter will describe the research methodology used to investigate the research questions developed in Chapter 5. It provides details regarding the research design, including: the choice of population, sampling selection; research instruments used; data collection processes and data analysis techniques.

6.2 The Research Method

In social research, such as the area of business and administration including accounting, marketing, entrepreneurship, management, human resource management, organisational behavior, economic and international business, research methods can be categorized into three types (Bryman 2004): quantitative, qualitative and combination methods (mixed method). The quantitative method is used widely to examine, collect and measure data by using statistical techniques (Bryman 2004). Qualitative research emphasizes quality in data collection and data analysis through examining documents, observing behavior, or interviewing participants (Creswell & Clark 2007). The mixed method is a combination of both the quantitative and qualitative methods (Creswell & Clark 2007).

This current study used the quantitative method for data collection in order to obtain the opinion of respondents about factors that affect accounting change in Thai public universities. The quantitative method is used for forecasting and predicting the results and also identifying cause and effect of the problem. Moreover, quantitative methods are an attempt to explain social change through the use of objective measures and statistical analysis (Creswell & Clark 2007). The decision was made to use the survey method, utilising a self-administered questionnaire, as it was considered preferable to explore more than one institution as a larger number of responses will allow conclusions to be drawn with greater confidence. Also, the data analysed can be used for comparison

between groups and is an appropriate method for analysing a large volume of data or number of people (Creswell & Clark 2007).

6.3 Sample Selection

Thai public universities were seen as an interesting research focus as public universities also have the option of transforming into autonomous universities (Kiratikarn 2004). As part of this transformation process, it is necessary for the universities to improve the budgeting and accounting systems to allow the universities to self-manage the financial affairs (Kiratikarn 2003; Verheul 2002).

This current study is focused on knowing the perceptions of the top finance managers of the university about accounting change in their university. Previous studies have found that top management influence the success of accounting implementation in organisations (Anderson 1995; Baird, Harrison & Robert 2007). The Chief Financial Officer was chosen as the target respondent because the CFOs are the most senior accountant in the universities and play an increasingly important role in deciding whether and how accounting techniques and practices are implemented in their universities. They are the most suitable and relevant respondent to obtain the views and opinions on accounting change in their universities. Thus, the survey was posted to the CFOs who hold the most senior finance position in the university.

6.4 Survey Method

Most of the previous research in the government accounting reform area employs an experimental and case study research design (Christensen 2002; Godfrey, Devlin & Merrouche 1996; Luder 1992; Marwata & Alam 2006; Saleh 2007; Yamamoto 1999). However, a number of studies also employ a survey method to investigate factors influencing accounting change in the public sector (Baird 2007; Lapsley & Wright 2003; Saleh & Pendlebury 2006; Tudor & Blidisel 2008; Venieris & Cohen 2004).

According to Nazari, Kline & Herremans (2006) there are several fundamental assumptions in survey research using self-report of attitudes, opinions, values, beliefs

and/or intentions. The self-report assumptions are discussed below to reflect the main purpose of the current research, which is to examine the factors that influence accounting change and factors that affect the change process in Thai public universities.

One important factor in determining the suitability of the chosen research method is the respondents. The respondents must be the most reliable source for certain types of information (Nazari, Kline & Herremans 2006). In the government accounting change research, the factors that influence or affect the change process are crucial. In this study, the Chief Finance Officers of all 78 Thai public universities were chosen as the target respondents because they are the most suitable and relevant respondents to give views on accounting change in Thai public universities.

Nazari, Kline & Herremans (2006) also note that the subjective perceptions of respondents actually matter. One can argue that opinions are not truth however; opinions of reality can be more powerful than reality itself since very often people act on their opinion (Nazari, Kline & Herremans 2006). In this study the factors that influence or affect the change process actually matter. Thus, the respondent's opinion is valuable.

Third, the perception can be demonstrated to be linked to factors and outcomes of interest to their organisation. In this study the respondent's perception can explain factors that both influence and be barriers to the success of accounting change. In other word, factors that influence the accounting change in the public sector have real situations. The respondent's perception also depends on the respondent's personal background and knowledge of government accounting reform. Thus, those opinions can both positively and negatively influence the change process which impacts on the organisation. The researcher considers a survey method is appropriate for this research according to the above assumptions of self-report surveys.

As noted by Saunders et al. (1997) "questionnaires are one of the most widely used survey data collection techniques because each person (respondent) is asked to respond to the same set of question it provides an efficient way of collecting responses from a large sample prior to quantitative analysis" (p.244). McClelland (1994) considers that

the use of questionnaires is the most widely used method of gathering empirical data and Janes (1999) considers it provides a snapshot of the current state of a group.

6.4.1 Questionnaire

A paper-based mail questionnaire was selected as it was considered that an electronic questionnaire would not fit with the cultural expectations. In the Thai culture, especially in the public sector, a paper-based mail questionnaire would be expected rather than an electronic survey. A paper-based mail questionnaire makes it more comfortable for the respondent to answer than an electronic questionnaire because not all public universities have a good internet system and not all respondents may be familiar with using an electronic system.

The questionnaire was developed using both closed questions (using a 5 point Likert scale) and open-ended questions (Bryman 2008; Creswell & Clark 2007). Space was also provided throughout the survey for respondents to write in additional comments. The study also relied on a review of various publicly available documents such as government papers and reports. The questionnaire was made into a booklet. The use of the booklet format provides a questionnaire that does not look too long or too difficult. The booklet, along with Research and Informed Consent information, was sent to each Chief Finance Officer. These documents were accompanied by a letter supporting the research from the President of the researcher's university. There is the belief that a letter of support from the President of the university would assist this research by encouraging the Chief Financial Officers to participate in this research and show that there would be a benefit to the universities from the findings of this research (see letter of support Appendix 8).

Also by using a mail questionnaire respondents would not have the pressure to provide an immediate answer and therefore be able to concentrate on the facts rather than provide a subjective view. Also a mail questionnaire would allow anonymity to the respondent (Gosselin 1997).

The first draft questionnaire was constructed based on a thorough review of the literature and an analysis of previously published questionnaires. Some questions were

taken from previous studies and others were developed from the literature for this research. The final draft of the questionnaire was reviewed by two Thai accountants in the Office of Comptroller General's Department, three Thai accountants in Thai public universities and three Australian accounting academics. The questionnaire was then adapted based on their views.

The written questionnaire consists of five sections as detailed below:

Section 1: Accounting system change in Thai public universities

This section of the questionnaire was designed to find out about the current accounting system in use, together with proposals for change. The questions are based on previous studies of accounting change in the public sector conducted by Jackson & Lapsley (2003), Lapsley & Wright (2004), and Venieris & Cohen (2004).

Section 2: Factors influencing accounting change in Thai public universities

The second section of the questionnaire was designed to investigate factors that influence accounting change based on previous studies in both the public and private sectors (Christensen 2002; Cobb, Helliard & Innes 1995; Godfrey, Devlin & Merrouche 1996; Hopwood 1987; Innes & Mitchell 1990; Jackson & Lapsley 2003; Kasurinen 2002; Lapsley & Wright 2004; Luder 1992; Monsen & Nasi 1998; Ribeiro & Scapens 2006; Venieris & Cohen 2004; Yamamoto 1999). Previous studies found that both internal and external factors motivate and act as catalysts for accounting change in organisations. The purpose of this part was to find out the cause of accounting change and to identify the factors that are catalysts for accounting change in Thai public universities.

Section 3: Barriers to and facilitators of accounting change

The third section of the questionnaire was designed to collect data about factors that can be either barriers to or facilitators of accounting change in Thai public universities. These questions were based on previous studies that examined the barriers to and facilitators of accounting change (Cobb, Helliard & Innes 1995; Hopwood 1987; Kasurinen 2002; Luder 1992; Mimba, Helden & Tillema 2007; Monsen & Nasi 1998; Ribeiro & Scapens 2006; Jackson & Lapsley 2003; Lapsley & Wright 2004; Venieris & Cohen 2004).

Section 4: Costing

The fourth section of the questionnaire was designed to explore cost techniques in use and the extent of ABC implementation in Thai universities. There have been a number of previous studies focusing on ABC implementation in universities (Broad & Crowther 2000; Cropper & Drury 1996; Granof, Platt & Vaysman 2000; Mitchell 1996) in the public sector (Baird 2007) and also other organisations in Thailand (Chongruksut 2002; Morakul 1999) which were used to inform the development of survey questions.

Section 5: General information

The last section of the questionnaire was designed to collect general information. General information is separated into two parts. The first part includes university status (whether or not autonomous), size of university (such as number of campuses, number of students and the age of the university). The second part is about the working experience of respondents. This is in order to ensure that all respondents meet the requirements of the sample group of the study.

Table 6.1 below links the sections of the questionnaire to the research questions developed in Chapter 5.

Table 6.1: Linking Questionnaire to Research Questions

Research Questions	Variables determined in questionnaire	Part/Question
RQ1: What factors influence accounting change in Thai public universities?	Variables for factors that influencing accounting change 1. External factors 2. Internal factors	Section 2: 1 2
RQ2: What are the major factors that have affected the success of the accounting change in Thai public universities? RQ2.1: What factors can be barriers to the success of accounting change in Thai public universities? RQ2.2: What factors act as facilitators to the success of accounting change in Thai public Universities?	Variables for barrier and facilitators to change 1. Barrier to accounting change 2. Facilitators of change	Section 3: 1 2
RQ3: What new accounting systems and techniques have been adopted by Thai public universities?	Variables for accounting change 1. Accounting system change 2. Stage of change 3. Type of accounting change 4. The importance of accounting change 5. Technique of accounting change 6. Factors that support the change 7. Monitoring of accounting change	Section 1: 1 2 3 4 5 6 7
RQ4: What are the factors influence and affect the use of ABC in Thai Public Universities?	Variables for cost information 1. Cost information and cost reporting 2. Problem of cost information 3. Cost method 3.1 ABC implementation 3.2 Factors influencing ABC 3.2 ABC benefit 3.3 ABC problem	Section 4: 1-11 12 13-15,17,18 19 20-21 23-24
RQ.5 Are there any university characteristics that may cause difference in the adoption of accounting practice?	Variables determined for all respondents 1. University characteristics: category of university (whether or not autonomous), Age of university, University size (number of student, number of campuses) 2. Demography Personal information of respondent: work experience	Section 5: 1-4 5

6.4.2 Reliable Translation

The questionnaire was originally developed in English. However, translation into Thai was necessary as all respondents would not be fluent in the English language. The Thai version was translated by two professional translators and back translated into English to ensure the accuracy of the translation. Thus the translation is accomplished through a two-stage translation and back-translation procedure. The questionnaire was translated from English to Thai. Each translated questionnaire was reviewed by other translators to ensure correctness.

6.4.3 Pre Testing

Although, the survey questions were based on the review of the literature and related to other instruments (Baird 2007; Christensen 2003; Godfrey, Devlin & Merrouche 1996; Luder 1992; Marwata & Alam 2006; Saleh 2007; Saleh & Pendlebury 2006; Venieris & Cohen 2004; Yamamoto 1999), the questionnaire was also examined by other researchers to assess question clarity and validity. The survey questionnaires have been tested and adapted based on the views of academic specialists; two Thai accountants in the Office of Comptroller General's Department, three Thai accountants in Thai public universities and three Australian accounting academics. This confirmed that the estimate of the time required was reasonable and that the questions were appropriate for the intended viewers. Some of the questions were modified to satisfy their comments before being sent to the participants.

6.4.4 Rules on Ethics and Confidentiality

Prior to using the questionnaires to collect data, the project was approved by Swinburne's Human Research Ethics Committee (SUHREC) in line with the National Statement on Ethical Conduct in Research Involving Humans (see appendix 1). The participants were informed that under the ethical rules, they were participating voluntarily and no risk, such as psychological, moral, legal or other risks, would impact on them. In addition, an information sheet, including the name of Swinburne University of Technology and the name of the Faculty, was prepared to explain the purpose of the study and the ethical rules, and these were attached to each questionnaire. The

respondents were also informed that their response would be treated as confidential, and that their name would not be identified in any written report.

6.4.5 The Initial Mail-Out

The Chief Financial Officer of all 78 Thai public universities was sent a questionnaire, a covering letter and a return envelope. In order to get a high response rate, the following procedures were taken:

- To ensure the questionnaire reached all 78 Thai public universities, the addresses of all universities was double checked from the website of the Office of Higher Education. Questionnaires were sent with reply paid envelopes without a return address printed on the front. This is to ensure the respondent's confidentiality.
- To increase the possibility that the questionnaires would be completed all questionnaires were sent on behalf of the President of Rajamangala Universities of Technology. It is in keeping with Thai cultural protocols to send a letter of support along with an invitation to volunteer as a research participant. As the President of RMUTI has a tradition of supporting research in the Thai public university sector, a letter of support for this study was forthcoming (refer appendix 11). However, sending a letter of support from the President of RMUTI to the Chief Financial Officer (Comptroller) of RMUTI was considered to be inappropriate based on the possibility that letter could be perceived as a form of coercion. Therefore the Chief Financial Officers of RMUTI was approached directly by the researcher.
- To increase the probability that the questionnaire would reach the right person, both the envelope and the covering letter inside were personally addressed to the position of the Chief Financial Officers. The covering letter was on RMUTI letterhead to signify potential importance.
- To increase the probability of the Chief Financial Officers completing and returning the questionnaire, the covering letter was carefully worded and

addressed personally to the Chief Financial Officer. This letter indicated what the study was about and the reasons why survey participation was useful and the importance of the findings for the community as well as for academics. The letter also stressed confidentiality and included contact details for any queries.

- In order to attract the interest of the respondent, the questionnaires were printed on laser-bond paper, in a booklet style. The use of the booklet format provides a questionnaire that does not look too long or too difficult.

6.4.6 Follow-up Procedures

A few completed questionnaires were received within one week after the mail-out. In the first week of the mail-out, phone calls were received from a few Chief Financial Officers to request further information about the survey. Several Chief Financial Officers contacted the researcher to advise that they were unwilling to answer the survey because of a lack of authority to reveal information without permission from the Vice-Chancellor or President.

One follow-up letter was sent to the Chief Financial Officers. Follow up letters are considered necessary to increase the rate of response. A reminder was sent after the four-week deadline for the return of completed questionnaires to all 78 Chief Financial Officers as no identifiers were on the returned questionnaires; so it was not possible to target non-respondents.

6.4.7 Non-Response

An important issue with surveys is the problem of non-response bias. The response bias is “the effect of non-responses on survey estimates” (Crewell 2009, p. 160). The possible problem is that non-respondents and respondents might differ in certain aspects and the respondents may not be representative of the population. To test for non-response bias there was the choice either to follow-up with all non-respondents as to the reason for non-participation, or to use statistical analysis to compare early responses to late responses. As recommended by Armstrong & Overton (1977), a statistical analysis for non-response bias was undertaken to compare early responses (respondents to the first mail out) versus late responses (respondents to the second mail out). In this current

study a paired-sampled t-test was conducted to address the non-response bias problem and to determine if there is a significant difference between the two groups (Coakes, Steed & Price 2008). In this case, the data separated into two sets of data: early and late responses, since non-respondents tend to be similar to late respondents in responding to surveys (Miller & Smith 1983). The result shows that there are no differences between the key variables in the first and the second groups because all significance values are above the alpha level of 0.05.

6.4.8 Data Analysis Technique

Data collected from the survey was analysed using the Statistical Package for the Social Sciences (SPSS). A discussion follows of the statistical tests to be used at different stages of the analysis.

Descriptive Analysis

Firstly, the primary analysis of the data is presented by using several statistical analyses that include descriptive analysis, chi-square, cross tabulation, t-test and analysis of variance (ANOVA). Descriptive analysis is generally used to describe the characteristics of the research sample and to address specific research questions underlying the statistical techniques (Hair et al. 2006; Pallant 2006). This study used descriptive analysis to understand the means and frequency of factors influencing and impacting on accounting change in Thai public universities. The Chi-square test is used to test for correlation between categorical variables by comparing the frequency of categories (Hair et al. 2006; Pallant 2006). Analysis of variance (ANOVA) has been used to assess the means of two or more sample groups (Hair et al. 2006; Pallant 2006). This study used ANOVA to test perceived actual benefits of ABC on the level of success of the ABC implementation. The t-test was used to assess whether the means of two groups are statistically different from each (Hair et al. 2006; Pallant 2006). For example the t-test is used to test any differences between expected benefits and actual benefits of ABC in this study.

The descriptive analysis is undertaken in two stages. The first stage provides descriptive analysis of the current knowledge of accounting reform in the Thai public sector with a

focus on Thai public universities including: the importance of accounting system change, stage of accounting system change, the importance of accounting techniques, the resources used to support accounting change, barriers to accounting change, facilitators of accounting change and the achieved level of success of the accounting change.

The second stage of analysis reported on the use of activity based-costing (ABC), one of the techniques of management accounting reform in the Thai public university. The descriptive analysis provides factors influencing and affecting the ABC adoption, the drivers and the problems of ABC adoption, the stage of the implementation, the expectations and the benefits of adopting ABC and the level of success achieved.

Comparative Analysis

Secondly, the comparative analysis examines different characteristics of Thai public universities and whether this had any affect on the accounting change. Comparison between different characteristic of the universities included: type of university - whether or not autonomous, age of university, and the size of the university as measured by the number of campuses and the number of students. The first stage of the comparative analysis investigated the characteristics of the university and whether this had any impact on the importance of accounting change, on the stage of accounting change and on the achieved level of accounting change. The second stage examined characteristics of the university and the impact on management accounting reform namely, activity based-costing (ABC). The comparative impact of any differences in the characteristic of the universities included the adoption of ABC, the adoption stage of ABC and the achieved level of ABC adoption. Testing was also undertaken to determine any differences in responses against whether or not the university's accounting change was either successful or unsuccessful.

Exploratory Factor Analysis

Thirdly, the main focus of this survey was to specifically address the factors that both influence accounting change and affect the change process. Exploratory factor analysis (EFA) was employed in this study. The EFA examines interdependence among a group

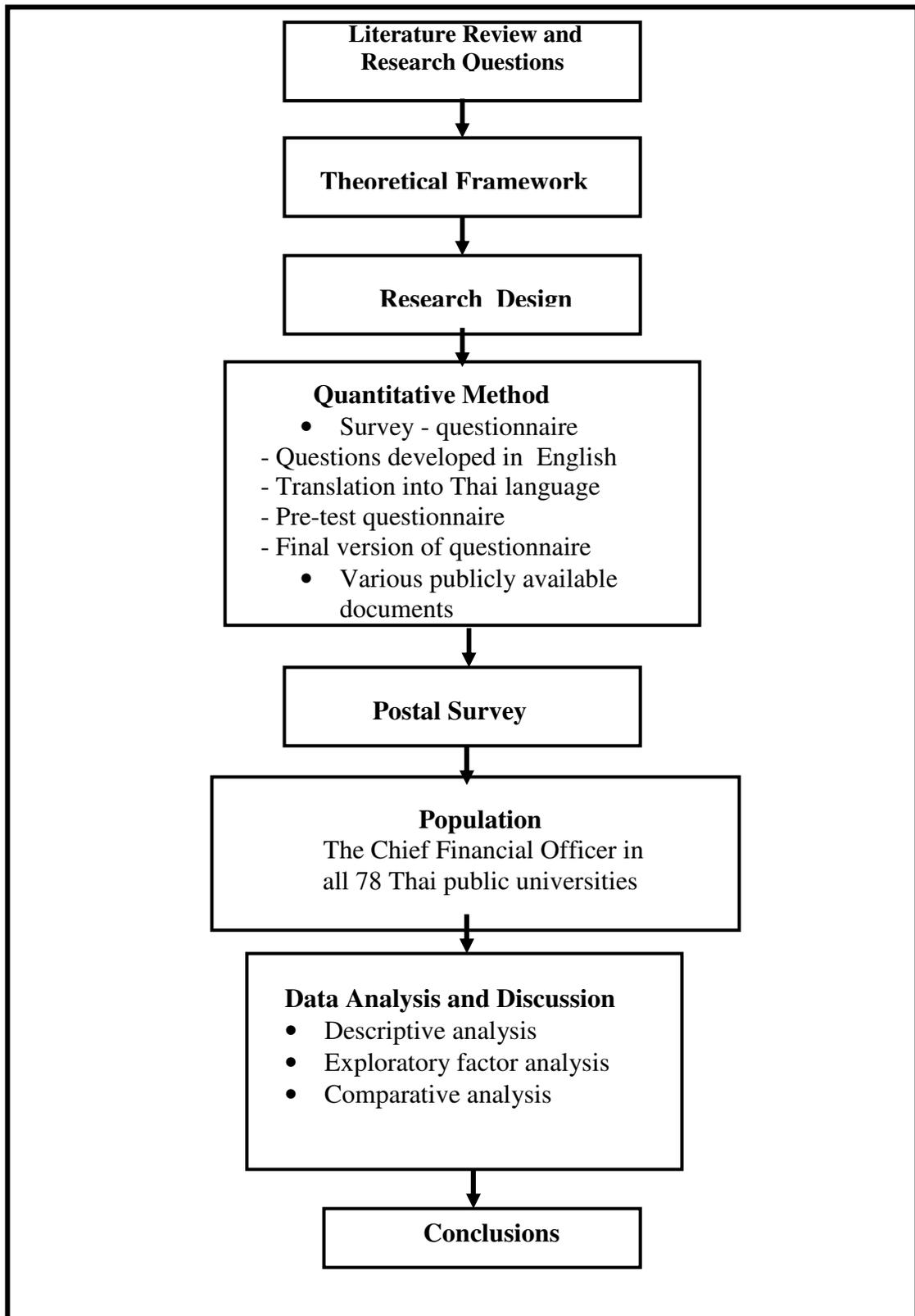
of variables and enables the grouping of a number of variables into a smaller subset (Hair et al. 2006; Pallant 2007). Factors that influence accounting change are presented in two groups: group one external factors and group two internal factors. Factors that effected accounting change are presented in terms of barriers to change and facilitators of change. A test of the reliability of external and internal factors and barriers and facilitators was undertaken using Cronbach's Alpha (Cronach 1951). The reliability coefficient for all factors will suggest that the construct was reliable and factor analysis is appropriate to analyze.

6.5 Conclusion

This chapter presented the research methodology used in this study. It used a quantitative research (mail survey) strategy by collecting and analysing primary data based on an anonymous self-reporting questionnaire. A paper-based mail questionnaire was selected as it was considered that an electronic questionnaire would not fit with Thai cultural expectations. The CFO was chosen as the target respondent because they are the most suitable and relevant respondent to obtain the views and opinions on accounting change in their universities.

The data analysis technique included: descriptive analysis, exploratory analysis and comparative analysis. Figure 6.2 summarizes the research methodology for this study. The following chapters will report on the findings of the study.

Figure 6.1: Summary of Research Methodology for this Current Study



Chapter 7

Results and Findings I

7.1 Introduction

In this chapter a discussion is given of the survey findings. First, an analysis of the response rate to the survey is given followed by a discussion of issues relating to the reliability of key variables and non-response bias. Next, details are given of the characteristics of the respondents to the survey. Then the primary analysis of the data is presented by using several statistical analyses that include descriptive analyses, chi-square, cross tabulation, t-test and analysis of variance (ANOVA).

7.2 Data Collection

Questionnaires were distributed to all 78 public universities throughout Thailand. The Chief Financial Officers was chosen as the target respondent because they are the most suitable and relevant respondent to give views on accounting change in their university. From the 78 questionnaires, 63 Chief Financial Officers responded, which constitutes an 81% response rate. Most of respondents completed the questionnaire and some of them gave valuable comments throughout the survey. A survey was deemed to be a usable if a respondent answered all but a few questions. Structured telephone calls and reminders not only helped in enhancing the response rate, but also provided an understanding of why some Chief Financial Officers did not respond. Among the reasons given for the non-response include: insufficient time due to the end of the year budget; a lack of authority to reveal information without permission from the Vice-Chancellor or President; and an expressed unwillingness to participate in the survey.

7.2.1 Reliability and Non-Response Bias

Reliability

In order to test reliability of key variables, this study used Cronbach's alpha. Table 7.1 presents the alpha coefficient for each key variable used in the statistical analysis. Generally an alpha of 0.70 or higher is required, with an alpha of .80 or higher

reflecting a ‘good’ scale (Sekaran 2000). As shown in Table 7.1, all alphas exceed 0.80. The inter-item consistency of the measures adopted in this study is therefore reliable.

Table 7.1: Reliability statistics

Variables	Mean	Standard Deviation	Variance	Cronbach’s Alpha
External factors influencing accounting change	4.098	.793	.790	.832
Internal factors influencing accounting change	3.794	.886	.702	.880
Barriers to accounting change	3.498	.947	1.08	.947
Facilitators of accounting change	3.905	.934	.743	.933
Importance of accounting system change	4.32	.849	.391	.846
Importance of accounting technique	4.18	.847	.524	.846
Resources to support Accounting change	3.957	.869	.656	.867
Reason for ABC adoption	3.492	.880	.853	.886
Expected benefits of ABC	4.263	.937	.563	.937
Actual benefits of ABC	3.274	.931	1.687	.937
Problems with ABC implementation	3.510	.969	.1.243	.968

Non-response bias

There are two potential problems that can happen when using a mail survey: low response rate and non-response bias. In order to increase the response rate, a follow up telephone call was conducted and a follow-up questionnaire was mailed approximately four weeks after the due date. Although there is no test to ensure that non-response bias does not exist, a test for non-response bias was conducted comparing the early and late respondents to the survey. Validity of the first and second mailing was assessed by using the t-test technique to compare the mean-values of each key variable as to the accounting change in universities. Table 7.2 shows that there are no significant differences ($p < .05$) in responses in relation to the key variable of the first group – early respondents (1-33) and the second group – late respondents (34-63). Therefore, evidence of non-response bias was not found and it is expected that the 63 respondents to this study can be representative of all 78 public universities.

Table 7.2: Test of Non-Response Bias

Comparison	N	Mean	Standard Deviation	Significance
External factors influencing accounting change				
- first group	33	4.10	.38	.23
- second group	30	4.09	.45	
Internal factors influencing accounting change				
- first group	33	3.85	.40	.24
- second group	30	3.72	.60	
Barriers to accounting change				
- first group	33	3.55	.65	.42
- second group	30	3.43	.71	
Facilitators of accounting change				
- first group	33	3.95	.57	.14
- second group	30	3.84	.46	
Importance of Accounting system change				
-first group	33	4.33	.52	.33
-second group	30	4.30	.46	
Importance of Accounting technique				
-first group	33	4.25	.52	.44
-second group	30	4.11	.46	
Resources to support accounting system				
- first group	33	3.97	.57	.88
- second group	30	3.93	.55	
Reason for adoption of ABC				
- first group	21	3.65	.74	.26
- second group	10	3.71	.57	
Expected benefits of ABC				
- first group	21	3.60	.70	.82
- second group	10	3.25	.60	
Actual benefits of ABC				
- first group	33	4.37	.63	.73
- second group	30	4.03	.67	
Problems with ABC implementation				
- first group	33	3.26	1.15	.56
- second group	30	3.30	1.13	

7.3 Respondents' Work Experience

A review of the university work experience of the respondents shows that 23.80% had less than 5 years experience; 34.90% 5-10 years experience; 30.20% 11-20 years experience; and 11.10% with more than 20 years experience (refer table 7.3). As this study investigated accounting change over the last 10 years, the majority of respondents

have exposure to accounting change within their university during this period and therefore able to share their knowledge of the accounting change process.

Table 7.3: Work Experience of the Respondents

Years of experience	Number	Percentage
<5 years	15	23.80%
5 – 10	22	34.90%
11 – 20	19	30.20%
>20 years	7	11.10%
Total	63	100.00%

7.4 Characteristics of Thai Public Universities

In this section details are given about the characteristics of the respondents' universities: the type of university, whether autonomous or not, the size of the university as measured by either the number of campuses or student cohort and the number of years of operation.

7.4.1 Type of University

Of the 63 useable responses, 39 of the respondents (61.90%) were from non-autonomous public universities, 11 from universities (17.50%) which were in the process of becoming autonomous and 13 from universities (20.60%) that had already made the transition to being autonomous (refer table 7.4).

The impetus for universities becoming autonomous came after the 1997 Thai economic crisis when the Asian Development Bank (ADB), which provided funding to the Ministry of Education, requested that all public universities become autonomous in order to improve the efficiency of administration (Kirtikara 2003; Sangnapaboworn 2003). In securing the education loan for public universities, the Thai government made a commitment to the Asian Development Bank that existing public universities would be incorporated by 2002. However, as shown Table 7.4 not all public universities have chosen to become autonomous which reflects the Thai government's approach to encourage rather than enforce the requirement for autonomy (Sangnapaboworn 2003). Anecdotal evidence suggests that the reason for some universities choosing not to pursue autonomous status is due to a lack of understanding of the benefit to be gained,

the process itself being too complex and some universities not being administratively ready for such a change. Nonetheless, regardless of the decision made as to the autonomous status of the university, there would still be a requirement for financial management systems to change in line with not only government reporting requirements, but also to meet the information needs of those within the university.

Table 7.4: Classification of Thai Public Universities

University classification	Number	Percentage (%)
Non autonomous public university	39	61.90
In the process of becoming autonomous public university	11	17.50
Autonomous public university	13	20.60
Total	63	100.00

7.4.2 Size of University

Size was measured by two variables, the number of campuses and the number of students.

7.4.2.1 Campuses of Thai Public Universities

Table 7.5 shows that the majority of respondents were from universities with less than 5 campuses (82.50%), with the minority from larger campuses, with only 14.30% having 5-11 campuses and 3.20% having more than 12 campuses.

Table 7.5: Campuses of Thai Public Universities

Characteristics	Categories	Number	Percentage (%)
Campuses	Less than 5 campuses	52	82.50
	5 – 11 campuses	9	14.30
	More than 12 campuses	2	3.20
	Total	63	100.00

7.4.2.2 Number of Students of Thai Public Universities

Universities can also vary in size based on the student cohort. As shown in Table 7.6, 11.10% of universities have between 2000-5000 students, 34.90% between 5001-10000 students, 31.70% were between 10000-20000 students and 22.2% with over 20000 students. There was no university with less than 2000 students. Therefore, the majority of universities had more than 10,000 students.

Table 7.6: Number of Students of Thai Public Universities

Characteristics	Categories	Number	Percentage (%)
Number of students	< 2000 students	-	-
	2000 – 5000	7	11.10
	5001 – 10000	22	34.90
	10000 – 20000	20	31.70
	> 20000	14	22.20
	Total	63	100.00

7.4.3 Years of Operation

Another distinguishing factor between universities is the time that they have been in operation as a university. More than a half the universities have been operating for less than 10 years (61.90%) with only 7.90% between 21 - 30 years, 15.90% between 31-50 years, and 14.30% with more than 50 years of operations (refer table 7.7). The results show that the majority of universities are less than 10 years old. This is not surprising given the rapid increase in the number of universities during the period 1995 to 2007. During this period the number of universities jumped from 24 to 78. During this period the Teacher Training Colleges and Institutes of Technology were transformed to become public universities (see appendix 11).

Table 7.7: Years of Operation

Characteristics	Categories	Number	Percentage (%)
Age group of university	<10 years	39	61.90
	11 – 20	-	-
	21 – 30	5	7.90
	31- 50	10	15.90
	>50	9	14.30
	Total	63	100.00

7.5 Accounting System Change Analysis

Traditionally the Thai government has used a manual cash based accounting and budgetary system (Office of the Comptroller General's Department, 2006). After the 1997 economic crisis, the Thai government faced an increasing need for improved financial information for planning and economic recovery (Henry & Attavitkamtom, 1999). There was a need for the Thai government to improve its accounting information

system to meet its objectives of transparency, accountability and value for money. Information from the cash based system did not provide data about the cost of service delivery it simply showed when money was received and paid. Performance assessment was difficult with such limited information. NPM financial management reform was a new initiative adopted for the Thai public sector. In line with NPM practices the financial reform included a move from the traditional budget and cash based accounting system towards a computerised accrual based accounting system in the hope that it would provide higher quality information (Office of the Comptroller General's Department 2006). This led to the initial stage of the reform which was the development of a computerised financial accounting system.

In line with the government requirements discussed above, the findings in Table 7.8 show that all universities either have or are intending to change components of their accounting system, most notably the financial accounting system (100% of respondents). The majority of respondents identified the following accounting systems have changed: financial accounting system (95%), budgetary system (93.70%), performance measurement system (81%), cost accounting system (76.20%) and auditing system (74.60%). The minority of respondents intend to make no changes to the following systems: auditing system (14.3%), cost accounting system (12.70%), performance measurement system (11.10%), financial accounting system (4.80%) and budgetary system (3.20%). Of the respondents 11.10% rate no change in the cost accounting system and auditing system, 7.9% rate no change in the performance measurement system and 3.20% rate no change in the budgetary system. A number of autonomous public universities have rated no change to the current accounting systems. The likely reason for this is that such universities have already updated the accounting systems during the transformation to autonomous status.

Table 7.8: Accounting System Change

Accounting system	Changed		No Change		Intending to in future		Total	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Financial accounting system	60	95.20	0	0.00	3	4.80	63	100
Budgetary system	59	93.70	2	3.20	2	3.20	63	100
Cost accounting system	48	76.20	7	11.10	8	12.70	63	100
Performance measurement system	51	81.00	5	7.90	7	11.10	63	100
Auditing system	47	74.60	7	11.10	9	14.30	63	100

7.6 Drivers for Accounting Change

To further understand the factors motivating accounting change (as detailed in Table 7.8 above), respondents were asked to rate the level of importance of a number of external factors that could be motivators. The mean rankings are shown in Table 7.9. Notably the most important factor is the requirement by the Thai government for public agencies to report unit cost (mean = 4.34). The government's requires the cost information for comparison of costs between public agencies. However, for this to be achieved it is necessary for the universities' financial accounting system changes to be implemented for the costing information to be extracted and the cost requirement met.

Therefore, another important driver of accounting change was the adaptation of the university's financial accounting system in line with the requirements of the Office of Higher Education Commission under the Ministry of Education (three-dimension accounting initiative) (mean=4.31) and the Comptroller General's Department (mean=4.26). Another important external factor is the need for public universities to be more efficient, to provide services based on value for money and to be more transparent and accountable. These findings indicate that government initiatives were the main drivers for the accounting change together with the need to improve governance of public agencies. This is similar to findings by other researchers (Godfrey, Devlin & Merrouche 2001; Marwata & Alam 2006; Saleh 2007) who found that in developing countries, improved financial management, under NPM, is introduced to support improvements in governance.

Table 7.9: External Factors Influencing Accounting Change

External factors	Mean (N=63)	Standard Deviation
Requirement by the Thai government for public agencies to report unit cost	4.34	0.59
To adapt the university's accounting system in line with the requirements of the Office of Higher Education Commission under the Ministry of Education (three-dimension accounting initiative)	4.31	0.66
To adapt the new accounting system imposed by the Comptroller General's Department	4.26	0.67
Government requirement for public agencies to be more efficient and to provide services based on value for money	4.22	0.65
Availability of new computer technology to upgrade existing accounting system	4.15	0.70
Government requirement for a more transparent and accountable public sector	4.12	0.65
Requirement to meet revised rules imposed by government in relation to university funding	4.07	0.67

In addition to the external factors influencing change, internal factors were also important catalysts. Table 7.10 reports the ranking of the internal factors that influenced accounting change in Thai public universities. The highest ranked internal factors are: requirement for tighter control of university expenditure (mean=4.25); the need for cost information for performance measurement initiatives (mean=4.11); and a desire to keep up with the latest innovations in performance measurement (mean=4.09). Other highly ranked factors included: to update the accounting system as it was not able to meet the information needs of external users (mean=3.93); top management of university (president and university committee) wanting upgraded systems (mean=3.93); lack of decision-relevant cost information from the accounting system (mean=3.87); to update the accounting system as it was not able to meet the information needs of internal users (mean=3.84); to provide improved financial information for university strategic planning (mean=3.84); and to provide information for those within the university for operational (day-to-day) decision-making (mean=3.79). The mean score of all factors suggest that university management wanted to improve the universities reporting and measurement systems and that more information was needed for control and decision making at all levels within the university.

Table 7.10: Internal Factors Influencing Accounting Change

Internal factors	Mean	Standard Deviation
Requirement for tighter control of university expenditure	4.25	0.67
The need for cost information for performance measurement initiatives	4.11	0.67
Desire to keep up with the latest innovations in performance measurement	4.09	0.66
To update the accounting system as it was not able to meet the information needs of external users	3.93	0.93
Top management of university (president and university committee) wanting upgraded systems	3.93	0.85
Lack of decision-relevant cost information from the accounting system	3.87	0.79
To update the accounting system as it was not able to meet the information needs of internal users	3.84	0.98
To provide improved financial information for university strategic planning	3.84	0.98
To provide information for those within the university for operational (day-to-day) decision-making	3.80	0.89
To provide improved information for preparing university budgets	3.79	0.82
Need for tighter financial management due to less government funding	3.73	0.84
The desire to become an autonomous university	3.60	0.87
Request from the Deans for cost information	3.47	0.87
Request from Heads of administrative departments for cost information	3.31	0.87
Request from Heads of Schools for cost information	3.28	0.90

7.6.1 Importance of Accounting Change

When respondents were asked about the importance of adopting specific accounting changes at their university, it can be seen from the findings detailed in Table 7.11 that all accounting systems required attention and were given high rankings: financial accounting system (mean=4.50), performance based-budgeting system (mean=4.38), auditing system (mean=4.30), cost accounting system (mean=4.22) and performance measurement system (mean=4.20). These findings suggest that the current systems were not providing the necessary information for the new financial accountability and supports the earlier finding that the top management of the universities wanted upgraded systems. For example, when asked if the university's current financial system

provided enough data for cost management purposes only 26.8% of respondents agreed. The high level of importance given to the accounting system changes is not unexpected. First there were the government requirements, but also within the Thai higher education sector deficiencies had been identified in the internal accounting practices. A report in the series of Research and Development project on Higher Education Management System in Thailand identified several factors which have been viewed as the root causes of the financial problems in Thai public universities (Weesukul 2004). Factors identified include: a lack of costing information and the lack of a systematic accounting system to record and thereby control revenue and expenditure (Weesakul 2004).

The high level of importance given to accounting change is not unexpected. Prior to the accounting reform, the Thai government (and its agencies) used a manual cash-based accounting system. This system only focused on cash receipts and cash payments. No information was available about the costs of activities or services delivered to the public. Performance assessment was not accurate as expenses rather than costs were available from the existing system. Therefore, accounting reform was essential for the Thai government to support the economic recovery.

Table 7.11: Importance of Accounting Change

Accounting system	Mean (N=63)	Standard Deviation
Financial accounting system	4.50	0.53
Performance-based budgeting	4.38	0.55
Auditing system	4.30	0.68
Cost accounting system	4.22	0.65
Performance measurement system	4.20	0.67

The majority of respondents (79.4%) noted that their university moved from cash to accrual accounting after 2001, which is in line with the government initiative announced in August 2001 (refer Table 7.12).

Table 7.12: Cash to Accrual Accounting System

Categories	Number	Percentage
Before 2001	6	9.50
After 2001	50	79.40
Have not changed	2	3.20
Currently in the process of changing	5	7.90
Total	63	100.00

Table 7.13 provides information about the stage of completion of the accounting system changes. Although individual universities are at different stages of the change process the majority are in the implementation phase. For those universities that have completed the change process it appears that success has been achieved more in the financial accounting side of operations than cost accounting. These findings could suggest that the cost accounting system changes are reliant on changes to the financial accounting system or that more difficulty is being experienced with the implementation of the costing systems. This is supported as the majority of respondents (60.7%) who noted that the costing system was dependent on the change from cash to accrual accounting, and that this change process had not yet been completed. This is similar to the finding of Venieris & Cohen (2004) whereby the introduction rate of cost accounting was less than accrual based financial accounting in Greek universities. Venieris & Cohen's (2004) noted that without an accrual based financial accounting system a cost accounting system could not run as a parallel system. As noted by one respondent *"financial accounting information in my university was unreliable (lack of quality of financial accounting information) and led inability to go on to collect the cost information"*. Other comments from respondents suggest problems with the new accounting system (the three-dimensions accounting system) required by the Ministry of Education as reasons why system changes are still in progress and not completed.

"...the government should be clearer about the stages of Three-dimension accounting system and financial accounting system change..."

"...Three-dimension accounting system not suited to my university because of university structure (size and type), for example my university is a small university and there is no campus but Three-dimension accounting system makes it difficult to apply to my university..."

This suggests that there may be practical problems that the universities have to overcome before change can be completed successfully. The comments also suggest that the system change recommended by the government takes a "one size fits all" approach without considering differences between the universities.

Table 7.13: Stage of Accounting Change

Accounting system	Planning		Implementation		Completed		Total	
	N	(%)	N	(%)	N	(%)	N	(%)
Financial accounting system	8	12.70	41	65.10	14	22.20	63	100
Budgetary system	8	12.70	46	73.00	9	14.30	63	100
Cost accounting system	10	15.90	47	74.60	6	9.50	63	100
Performance measurement system	13	20.60	39	61.90	11	17.50	63	100
Auditing system	16	25.40	36	57.10	11	17.50	63	100

7.6.2 Importance of Accounting Technique to Support Change

The specific types of accounting techniques adopted by the universities are shown in Table 7.14. It can be seen that accrual accounting (mean=4.47) is the most important technique, followed by changes to budgeting (mean=4.26) and costing practices (mean=4.17). The adoption of these techniques is in line with the Thai government initiatives. The adoption of accrual accounting provides a systematic system that will provide the necessary information for transparency and accountability. New budgeting practices will allow the universities to accept more responsibility for spending when given block grant funding. The adoption of ABC will provide the information necessary to assess whether the services offered are providing value for money. The high importance given to the BSC supports the findings of Rompho (2007) who studied the balanced scorecard in Thai public universities. He found that the main stimuli for the implementation of BSC were new government regulations. He also found that due to the de-bureaucratization of the education sector university staff both expected and gave support to the major changes in management processes that came with this structural change. University staff considered that an updated performance measurement system was necessary for the university to survive under increasing competitive pressure.

Other studies of Universities have similar findings regarding the adoption of new accounting techniques to improve financial management. Christiaens & Wielemaker (2003) found that accrual based accounting had been introduced to Belgian higher education to measure academic assets and liabilities. In Greece, the introduction of accrual accounting, cost accounting and budgetary practices increased the efficiency and effectiveness of Greek public university administration (Venieris & Cohen 2004). The implementation of accrual accounting in Romanian higher education provided the

necessary accounting information for decision making such as comparing outputs among departments (Tudor & Blidisel 2008).

Table 7.14: Importance of Accounting Technique to Support Accounting Change

Accounting technique	Mean (N=63)	Standard Deviation
Accrual accounting	4.47	0.53
Performance-based budgeting	4.26	0.62
Balanced Scorecard	4.20	0.72
Activity-based costing	4.17	0.73
Block grant budgeting	4.17	0.79
External auditing	4.14	0.75
Key performance indicators	4.06	0.69
Internal auditing	4.00	0.87

7.6.3 Resources to Support Accounting Change

Respondents were asked to identify the most important resources available to assist in the change process. Findings suggest that both internal and external resources were relied upon to support the implementation of the new systems. The highest rated external resources were training provided by the Comptroller General’s Department (mean=4.22) and networking with other universities, government bodies, and professional organisations (mean=4.05). The highest ranked internal resource was university based training courses (mean=4.02). These seem to support Luder (1992) and Christensen (2003) who mentioned that key actors (the promoters of change and producers of information) act as communicators (facilitators) for the change process. Luder (1992) also pointed out that if there is strong enough influence by the promoters and producers of change then it is more likely that a successful outcome will be achieved. Jackson & Lapsley (2003) mention that the adoption of new accounting practices and techniques might not succeed without the potential of adopters being able to learn about the innovations that are relevant to their organisation’s requirements. The high level of support given to university staff through the training courses should enable the adopters to gain the skills necessary for the specific accounting changes being implemented. As noted by one respondent *“I want the government to have a well prepared training program for the government accounting reform for my university”*.

Given that accounting staff at the universities had previously been using a manual cash based system, the move to a computerised accrual based system would have presented many challenges. Employees would have been faced with a steep learning curve to

acquire the necessary skills and knowledge to implement the new systems. As the findings show training was seen as the most important resource to assist in the change process.

Table 7.15: Resources to Support Accounting Change

	Mean N=63	Standard Deviation
Training courses by the Comptroller General's Department	4.22	0.92
Professional publications	4.04	0.70
Training courses within the university	4.01	0.68
Auditors/consultants	4.01	0.81
Staff feedback	3.98	0.87
The world wide web (internet)	3.96	0.87
Networking with other universities, government bodies, professional organisations	3.88	0.88
Seminar/conferences	3.84	0.78
Government publication	3.82	0.90
Training courses by the Ministry of Education	3.76	0.85

7.7 Barriers to Accounting Change

According to previous studies government accounting reform is not without its problems (Christensen 2002; Godfrey, Devlin & Merrouche 2001; Luder 1992; Venieris & Cohen 2004). In developing countries a lack of resources, lack of necessary staff and insufficient funding has been identified as barriers to change (Mimba, Helden & Tillema 2007). For example Huran (2007) found that government accounting reform in Indonesia was hampered by government accounting staff not being accounting professionals and only having direct experience in the cash basis of accounting. Moreover, Venieris & Cohen (2004) mentioned that the lack of accounting staff and the lack of an appropriate software packages slowed the process of accounting reform in Greek universities

Table 7.16 details the difficulties met by the universities in the implementation of the new accounting systems. The major barrier was the lack of an appropriate software package (mean=3.87) which is similar to the findings of Venieris & Cohen (2004). As noted by one respondent *"the government should provide appropriate accounting software package for university"* .

Other highly ranked factors were not having enough full-time staff (3.77), lack of expertise in information systems (3.74) and lack of internal staff to monitor the change process (3.74). These findings support Mimba, Helden & Tillema (2007) and are similar to the problems identified by Venieris & Cohen (2004). Bowornwathana (2000) mentioned that the Thai government reform has not been successful due to the officers working on the reform project not being employed on a full-time basis. The lack of full-time staff may lead to insufficient time being available to devote to the work effort on the accounting reform, and not allow staff to build an in-depth understanding of both the problem and the needs of the universities. As a consequence the lack of enough full-time staff may slow the process of change.

Other barriers identified include a difficulty in designing a new financial system (mean=3.79), lack of understanding and knowledge of data requirements (mean=3.71), current technology not being able to cope with the new reporting requirements (mean=3.68), the lack of an external consultant (mean=3.65) and accounting staff shortage (mean=3.65). The evidence from respondents supports the findings and gives further insight:

“...My university does not have enough full time accounting staff and I have a lack of good understanding of new government accounting requirements. Thus, these factors will effect the success of implementation process, I think..”

“...I lack understanding in new government accounting and data requirement” and “I want the government to have well prepared training of government accounting reform for university...”

“...Staff knowledge is very important before shifting into new accounting system...”

This highlights the importance of having the “right” staff to assist in the change process and supports Harun’s (2004) finding. As mentioned Thai government accountants would have been very experienced in the manual cash based system. The new system required them not only to gain knowledge of accrual accounting but also the design and use of computerised systems. Therefore, it is not surprising that difficulties would be experienced in relation to planning the change process and for the staff to be able to easily identify why and how current practices needed to be changed.

These barriers may have led to the minority of Thai public universities having completed the accounting reform (refer Table 7.10). However, resistance to accounting change was not found to be a strong barrier in the case of Thai public universities. This is probably due to the high power distance of Thai society which explains the level of inequality in power between people in terms of hierarchical values (Hofstede 1984). In developing countries, public sector decision-making is highly centralised (Harun 2004) and as the accounting system reform was imposed by the government it would be given the highest priority by university management.

Table 7.16: Barriers to the Success of Accounting Change

Variable factors	Mean N=63	Standard Deviation	Rank
Inappropriate software packages	3.87	0.95	1
Difficulty in designing a new financial system	3.79	0.93	2
Not enough full-time staff	3.77	1.12	3
Lack of expertise in information systems	3.74	0.96	4
Lack of internal staff to monitor the change process	3.74	0.99	5
Lack of understanding and knowledge of data requirements	3.71	0.99	6
Current technology not able to cope with new requirement	3.68	1.01	7
Lack of external consultant	3.65	1.03	8
Culture and mind-set of employees working within university	3.65	1.08	9
Accounting staff shortage	3.65	1.12	10
High cost for external consultant	3.63	1.00	11
Lack of accounting staff involvement	3.63	1.12	12
Lack of understanding of how to collect data	3.61	0.99	13

7.8 Facilitators of Accounting Change

Additionally, Table 7.17 details the respondent's ranking of factors that they considered important in supporting the change process. The most important factor was the support given by senior management at the University (mean=4.44). As commented by one respondent "*...my university has strong commitment by top management of university (president and university committee) via university policy and it has power to force the success of accounting change, I think...*"

In addition, the question on which Table 7.17 is based also offered the opportunity for respondents to rank the top three facilitators that they consider supports the success of the accounting change in their universities. The top three facilitators identified were: (1) strong support by top management of university, (2) appropriate software and (3) enough full-time staff. This supports Baird (2007) who found that top management support was associated with the success of accounting change and Luder (1992) and Christensen (2003) who note that promoters of change can speed the change process. As noted by Luder (1992) the successful outcome of government accounting change will be achieved if there is strong support by the promoters and producers of change.

Other highly ranked factors that the respondents considered important to support the change related to the producers of change such as: having accounting staff involvement and commitment (mean=4.15), adequate number of full-time staff (mean=4.14), adequate number of full time accounting staff (mean=4.11) and adequate number of internal staff to support the change process (mean=4.04). These findings support previous studies (Christensen 2002; Godfrey, Devlin & Merrouche 2001; Lapsley & Wright 2004; Luder 1992) that highlighted the importance of producers of change that positively influence the success of the change.

Furthermore, another highly ranked factor was related to having the necessary technological resources such as an appropriate software package (mean=4.12), technology able to cope with new requirement (mean=4.11), and adequate level of staff with knowledge of information systems (mean=4.01). As noted by one respondent “...I want to have an appropriate software package company to develop a program at my university, I hope it will help to speed the process of change...”.

Moreover, respondents considered that a well documented project plan to guide the implementation (mean=4.03), and the strong force of government law to impose accounting change (mean=4.00) were important factors to support the change process. The summary of factors that can support accounting change in Thai public universities suggest that if there is strong enough support by the top management of the university evidenced by employment of sufficient full-time staff and a willingness to invest in technology resources (both IT staff and resource) then both should positively impact on the speed of the accounting change in Thai public universities.

Table 7.17: Facilitators of Accounting Change

Variable factors	Mean N=63	Standard Deviation	Rank
Commitment by top management of university (president and university committee)	4.44	0.66	1
Accounting staff involvement and commitment	4.15	0.74	2
Adequate number of full-time staff	4.14	0.80	3
Appropriate software packages	4.12	0.83	4
Technology able to cope with new requirement	4.11	0.84	5
Adequate number of full time accounting staff	4.11	0.80	6
Adequate number of internal staff to support the change process	4.04	0.81	7
Well documented project plan to guide the implementation	4.03	0.86	8
Adequate level of staff with knowledge of information systems	4.01	0.81	9
Strong force of government law to impose accounting change	4.00	0.78	10
Support from the accounting professional bodies	4.00	0.80	11
Understanding and knowledge of data requirement	4.00	0.87	12

7.9 Success Achieved by Universities

Respondents were asked to rate whether they considered the accounting change in their university was successful. Table 7.18 presents the cross tabulation of the stage (planning, implementation and completed stage) of accounting system change (financial accounting system, management accounting system and auditing system) against the level of success achieved (no change, unable to access this stage, unsuccessful and successful). The finding show no statistical relationship ($P < 0.05$) between the stage of accounting change on the level of success achieved in any of the individual systems detailed in Table 7.18.

The majority of respondents note that their universities were successful in the implementation of both the budgeting system (65.10%), and the financial accounting system (63.50%). A minority of respondents noted success with the performance measurement system (42.90%), the cost accounting system (34.90%) and the auditing system (31.70%).

The minority of respondents noted that they were unable to assess at this stage whether the implementation was successful in relation to the auditing system (44.40%), the cost

accounting system (42.90%), the performance measurement system (34.90%), the budgetary system (23.80%) and the financial accounting system (20.60%).

A minority of respondents rate the accounting change as unsuccessful for the following systems: 19% costing accounting system; 17.50% auditing system; 12.70% performance measurement system; 11.10% financial accounting system; and 6.30% budgetary system.

Table 7.18: Cross Tabulation between the Stage of Accounting Change on the Level of Achieved Accounting Change

Accounting system	Stage of change	No change		Unable to access this stage		Unsuccessful		Successful		Total	
		N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Financial accounting system	Planning stage	1	12.5	3	37.50	0	0	4	50.00	8	100
	Implementation stage	1	2.40	10	24.40	6	14.60	24	58.50	41	100
	Completed stage	1	7.10	0	0	1	7.10	12	85.70	14	100
	Total	3	4.80	13	20.60	7	11.10	40	63.50	63	100
Chi-square =0.177; p = 8.931											
Budgetary system	Planning stage	1	12.5	3	37.5	1	12.50	3	37.50	8	100
	Implementation stage	1	2.20	12	26.1	3	6.50	30	65.20	46	100
	Completed stage	1	11.10	0	0	0	0	8	88.90	9	100
	Total	3	4.80	15	23.80	4	6.30	41	65.10	63	100
Chi-square =0.234; p = 8.057											
Cost accounting system	Planning stage	0	0	7	70.00	2	20.00	1	10.00	10	100
	Implementation stage	1	2.10	19	40.40	10	21.30	17	36.20	17	100
	Completed stage	1	16.70	1	16.70	0	0	4	66.70	6	100
	Total	2	3.20	27	42.90	12	19.00	22	34.90	63	100
Chi-square =0.075; p = 11.466											
Performance measurement system	Planning stage	0	0	10	76.90	1	7.70	2	15.40	13	100
	Implementation stage	4	10.30	11	28.20	8	15.40	18	46.20	39	100
	Completed stage	2	18.20	1	9.10	1	9.10	7	63.60	11	100
	Total	6	9.50	22	34.90	8	12.70	27	42.90	63	100
Chi-square =0.170; p = 15.386											
Auditing system	Planning stage	1	6.30	12	75.00	2	12.50	1	6.30	16	100
	Implementation stage	2	5.60	13	36.10	8	22.20	13	36.10	36	100
	Completed stage	1	9.10	3	27.30	1	9.10	6	54.50	11	100
	Total	4	6.30	82	44.40	11	17.50	20	31.70	63	100
Chi-square =0.081; p = 11.247											

7.10 Costing Systems

In this section the discussion will focus on findings specifically relating to the costing system changes in Thai public universities. The Thai government enacted the Royal Decree for good governance in 2003. The Royal Decree Section 21 states that every public agency must report unit costs to the government. Thus, the Government Accounting Standard Office, under the Comptroller General's Department was given responsibility to develop the basic rules for the cost accounting system. This led to the

output costing standard based on activity costing that was imposed by the Thai government since the 2005.

7.10.1 Current Financial Accounting System

Only 23.8% of respondents consider that the university's current financial system provides enough data for cost management purposes. This finding support the results in Table 7.8 that 88.9% (76.2+12.7) of respondents' Universities have changed or intend to change the cost accounting system for providing better cost information for cost management.

Table 7.19: Current Financial System Providing Enough Data for Cost Management Purposes

Categories	Number	Percentage
Strongly Disagree	28	44.40
Disagree	9	14.30
Neutral	11	17.50
Agree	9	14.30
Strongly Agree	6	9.50
Total	63	100.00

7.10.2 Factors Influencing the Need for Cost Information

The objective behind Royal Decree Section 21 was that the Thai government wanted cost information to compare and control the cost of every public agency (Office of the Comptroller General's Department 2006). The requirement for output cost reports was a key feature of attempts to improve the efficiency and effectiveness of Thai public sector management including Thai public universities.

To identify the universities' need for cost information, the respondents were asked to rate the level of importance of a number of external factors which motivated the need for cost information in their university and the mean ranking is shown in Table 7.20. Not surprisingly the most important factors relate to the need to satisfy the reporting to government on budget matters (mean=4.20) and unit costs (mean=4.17). The added incentive from the Public Development Commission whereby the university is to receive the government bonus for collecting cost information also provided strong motivation (mean=4.04).

Table 7.20: External Factors Influencing the Need for Cost Information

Categories	Mean N=63	Standard Deviation
Information required for reporting to government on budget matters	4.20	0.62
Government policy requiring every public agency to report unit cost (such as the Royal Decree No.21)	4.17	0.68
Opportunity for university to receive the government bonus reward system which encourages university's to collect cost information (evaluated by the Public development Commission: PDC office)	4.04	0.94

In addition to the external factors influencing the need for cost information, internal factors are also important. Table 7.21 gives the ranking of the internal factors that influence the need for cost information. The highest ranked internal factors are: to support the university's decision making (mean=4.04); to support performance measurement initiatives within the university (mean=3.95); to meet the cost information needs of various users within the university (e.g. Deans, Heads of Schools, Heads of Administrative Departments) (mean=3.93); to support budget allocation (mean=3.92) and to support the university's strategic planning (mean=3.87). The mean score of all factors suggest that management required improved information for both control and decision making within their university.

Table 7.21: Internal Factors Influencing the Need for Cost Information

Categories	Mean N=63	Standard Deviation
To support the university's decision making	4.04	0.77
To support performance measurement initiatives within the university	3.95	0.79
To meet the cost information needs of various users within the university (e.g. Deans, Heads of Schools, Heads of Administrative Departments)	3.93	0.80
To support budget allocation	3.92	0.74
To support the university's strategic planning	3.87	0.79

7.10.3 The Importance of Each Type of Cost Information for Decision Making

As noted above, cost information for decision making was ranked the most important factor by respondents. To further explore decision making within the Universities, the respondents were asked to rate the types of cost information that was considered important for decision-making. The findings in Table 7.22 indicate that most importance was placed on understanding costs at the university level (mean=4.36) and

faculty level (mean=4.17). The findings also indicate that student costs per faculty is seen as important for collecting and analysing the costs (mean=4.15). The higher rating given to university cost level data may be due to the majority of universities being in the early stages of development of university costing and once the university level is complete then further refinements will be made (e.g. unit and student level).

Table 7.22: The Importance of Each Type of Cost Information for Decision Making

Categories	Mean N=63	Standard Deviation
University-wide costs	4.36	0.62
Faculty operating costs	4.17	0.66
Student costs per faculty	4.15	0.67
University operation cost	4.15	0.72
Department operating costs	4.14	0.80
Research grant costs	4.09	0.73
Unit of study costs	3.95	0.74
Cost of individual courses	3.93	0.85
Campus operating costs	3.87	0.97
Local fee paying undergraduate students costs	3.77	0.92
Local fee paying post-graduate students costs	3.74	0.93
International fee-paying post-graduate student costs	3.46	1.04
International fee-paying undergraduate student costs	3.39	1.08

7.10.4 Cost Report

The majority of respondents (74.60%) note that their university currently produces university-wide cost reports with 66.70% also producing faculty operational cost reports and 58.70% producing department operating costs. Only 30.20% of respondents currently produce cost reports at the campus level. This is not unexpected given that the majority of respondents' universities have less than 5 campuses. Table 7.23 provides a summary of the cost reports currently identified by the respondents for their universities. Also the results in Table 7.23 highlight that all universities intend to expand their cost reporting in the future which suggests that there is a need for more cost information, and that the universities lack either the resources or time to make it happen now.

Table 7.23: Type of Internal Cost Reports

Type of cost	Yes	No	Intending to in future	Total N=63
	(%)	(%)	(%)	(%)
University-wide cost	74.60	11.10	14.30	100
Campus operating costs	30.20	49.20	20.60	100
Faculty operating costs	66.70	15.90	17.50	100
Department operating costs	58.70	19.00	22.00	100
Cost of individual courses	33.30	41.30	25.40	100
Unit of study costs	44.40	31.70	23.80	100
Student costs per faculty	55.60	20.60	23.80	100
Research grant costs	49.20	28.60	22.20	100
University operational costs university faculty and school	52.40	22.20	25.40	100
International fee-paying post-graduate student costs	14.30	65.10	20.60	100
International fee-paying undergraduate student costs	19.00	60.30	20.60	100
Local fee paying post-graduate students costs	27.00	50.80	22.20	100
Local fee paying undergraduate students costs	36.50	39.70	23.80	100

7.11 Importance of Cost Reporting

7.11.1 Importance of Promoters of Change and Cost Reporting

Respondents were asked to identify which person/bodies were the most important in requiring the University to develop cost reports (refer Table 7.24). The most important internal promoter was the President and university committee (mean=4.50) and the most important external promoter was the Bureau of Budget (mean=4.41). Other highly ranked promoters were the Office of Higher Education Commission under the Ministry of Education (mean=4.22), the Office for National Education standards and Quality Assessment (Public Organisation) ONESQA (mean=4.22), the Comptroller General's Department (mean=4.20) and the Public Development Commission Office (PDC) (mean=4.17).

Table 7.24: Promoters of Cost Reporting

Factors	Mean N=63	Standard Deviation
The President and university committee	4.50	0.68
The Bureau of Budget	4.41	0.63
The Office of Higher Education Commission under the Ministry of Education	4.22	0.70
The Office for National Education standards and Quality Assessment (Public Organisation) ONESQA	4.22	0.75
The Comptroller General's Department	4.20	0.72
The Public Development Commission Office (PDC)	4.17	0.79
The Dean	4.09	0.81
The Head of School	3.90	0.94
The Heads of Administrative department	3.88	0.91

7.11.2 University Commenced Producing External and Internal Cost Report

The majority of respondents (60.30%) note that their University commenced producing both internal and external cost reports after 2003 (refer Table 7.25). This relates to the timeframe given by the Thai government for every public agency, including public universities, to report unit costs in 2003. The government will use the cost reports to compare costs between public universities and look at cost reduction opportunities in the future (Office of the Comptroller General's Department 2001). A minority of respondents (11.1%) have been producing cost reports prior to the government requirements and the most likely reason for this is that a number of universities would have been autonomous and therefore would have had a more developed costing system to assist in the provision of the financial information for management of an autonomous institution (Kirtikarn 2001).

A further 28.6% of respondents are either developing cost reports or not reporting unit cost to government. This may be due to some universities not yet completing the change to accrual accounting which would inhibit their ability to meet the requirement to report the unit costs to the government.

Table 7.25: Preparation of External and Internal Cost Reports

Categories	Internal cost report		External cost report	
	Number	Percentage	Number	Percentage
Before 2003	7	11.10	7	11.10
After 2003	38	60.30	38	60.30
Do not report cost information to government	7	11.10	8	12.70
Developing cost report	11	17.50	10	15.90
Total	63	100.00	63	100.00

7.11.3 Stage to Prepare the Unit Cost Report in Line with the Royal Decree 21

When respondents were asked about the stage they are at in the preparation of the unit cost report in line with the Royal Decree 21, the finding in Table 7.26 shows that 31.70% of universities are producing the report, 47.60% are currently working on preparing the report, with 12.70% in the planning stage and only 7.90% not required to produce report.

Table 7.26: Preparation of Unit Cost Report in Line with the Royal Decree 21

Stage to prepare the unit cost report in line with the Royal Decree 21	Number	Percentage
Planning stage	8	12.70
Implementation stage	30	47.60
Completed and producing report	20	31.70
Not required to produce report	5	7.90
Total	63	100.00

7.11.4 Problems in the Process of Developing the Unit Cost Report in Line with Royal Decree 21

Problems experienced by the universities in developing the unit cost report in line with Royal Decree 21 are reported in Table 7.27. The highest ranked problem is due to the adoption of the new accounting system for Thai universities (Three dimension accounting) not yet being complete (mean=3.98). Comments from respondents further explain this barrier:

“...My University met difficulty in Three-dimension accounting system and I am not clear about Three-dimension accounting system and I had difficulty in obtaining appropriate accounting software package...”

“...there are differences between centralization and decentralization recording system by size of university that Three-dimension accounting has not covered. My university is a single university which has no campus and the Three dimension accounting guide line was not well designed to my university...”

Other highly ranked barriers were: difficulty in collecting cost data (mean=3.98; difficulty in defining cost objects/cost pools for the cost accounting system (mean=3.94); and difficulty in identification of appropriate cost drivers (mean=3.92). These problems relate to the results outlined in Table 7.26 which show that the minority of universities are producing unit cost reports (31.70%) as a very high percentage (69.30%) of universities are still in the planning and implementation stage of the costing system.

Although, the Thai government mandated the Comptroller General’s Department to provide basic guidelines for reporting unit cost by activity to all public sector agencies, there was no specific guidance given on how to setup the costing system. This is because different public agencies have specific activities and the Comptroller General’s Department was unable to develop guidelines to accommodate the differences in public agencies (Office of Comptroller’s General Department 2001). Also government accounting staff would not have had a strong knowledge of costing given their focus was on manual cash based reporting. Therefore, without specific guidelines the staff would have experienced difficulty setting up the costing system.

Table 7.27: Problems in Developing the Unit Cost Report in Line with Royal Decree

Factors	Mean	Standard Deviation
1. Accounting system for Thai universities (Three dimension accounting) not yet completed	3.98	1.07
2. Difficulty in collecting cost data	3.98	0.94
3. Difficulty in defining cost objects/cost pools for the cost accounting system	3.93	0.80
4. Difficulty in identification of appropriate cost driver	3.92	0.82
5. Accounting staff lack experience in costing methodology	3.88	0.93
6. Lack of external accounting consultant	3.87	0.88
7. Lack of time and resources to collect cost data	3.79	0.96
8. Lack of internal training team	3.77	0.86
9. Lack of external IT system consultant	3.73	0.93
10. Lack of understanding of cost processes by staff	3.71	0.95
11. Change from cash to accrual accounting not yet completed	3.60	1.19
12. Lack of internal commitment of organisational members to produce cost information	3.58	0.85
13. The government Fiscal Management Information System (GFMS) not yet completed	3.53	1.08
14. The absence of a uniform costing report for government	3.39	0.88
15. The absence of a uniform costing report for university use	3.38	0.90
16. Lack of commitment by top management of university (president and university committee)	3.33	1.06
17. Lack of government funds to implement costing system	3.20	0.96

7.12 Focus on Activity Based Costing

As mentioned earlier, in 2003 the Thai government commenced the cost control program for the public sector by enacting the Royal Decree Section 21. Although Royal Decree Section 21 did not specifically call the output costing requirements activity based costing, it was essentially developed on the same principles in that costs would be assigned to activities. Therefore, to learn more about whether universities have adopted ABC as their preferred costing system to satisfy the government requirement respondents were asked about the costing practices within their university.

7.12.1 Adopted Activity-Based Costing (ABC)

When respondents were asked about whether their university had adopted activity-based costing (ABC) 49.21% of universities have adopted ABC, 30.16% plan to adopt ABC in the future and 20.63% have not adopted ABC. Therefore, the findings suggest that ABC is the costing methodology that best unit suits the university costing requirements.

Table 7.28: The Adoption of ABC

Categories	Total	
	N	%
Adopt ABC	31	49.21
Adopt ABC but has abandoned	0	0.00
Not adopt ABC	13	20.63
Not adopt ABC but plan to adopt in the future	19	30.16
Total	63	100.00

7.12.2 Authorities or People influencing Adopting of ABC

According to previous government accounting studies (Chirstensen 2002; Godfrey, Devlin & Merrouche 1996 2002; Jackson & Lapsley 2003; Lapsley & Wright 2004; Luder 1992) government initiatives have been identified as the stimuli for accounting innovation. The respondents to this study also support this. For those universities that had adopted ABC, respondents were asked to rate the importance of both external and internal authorities or people in the decision to adopt ABC in their universities. The mean ranking is shown in Table 7.29. Notably the most important external authorities promoting costing reforms were the Comptroller General’s Department (mean=4.25), the Office of Higher Education Commission under Ministry of Education (mean=4.12) and the Bureau of Budget (mean=4.12).

Table 7.29: Importance of External Authorities/People for ABC Adoption

Factors	Mean (N=63)	Standard Deviation
The Comptroller General’s Department	4.25	0.85
The Office of Higher Education Commission under the Ministry of Education	4.12	0.84
The Bureau of Budget	4.12	0.95

In relation to internal people who supported the ABC initiative, Table 7.30 shows support was given from the highest levels of the University: the President and university committee (mean= 4.61), the Deans (mean=3.90), the Heads of School (mean=3.67) and the Heads of Administrative Departments (mean=3.74).

Table 7.30: Importance of Internal Authorities/People for ABC Adoption

Factors	Mean N=63	Standard Deviation
The President and university committee	4.61	0.61
The Dean	3.90	0.74
The Head of School	3.67	0.83
The Heads of Administrative department	3.74	0.89

In developing countries such as Thailand, public sector decision-making is highly centralised (Harun 2004). Give that ABC was promoted by the highest level of authority, both external (The Comptroller General’s Department, the Office of Higher Education Commission under Ministry of Education and the Bureau of Budget) and internal (The President and university committee) to the university then it is not surprising that it would be given a high priority within the University.

7.12.3 Stage of ABC Implementation

For those respondents who noted that their University had adopted ABC when asked about the stage of ABC implementation, it can be seen from the findings in Table 7.31 that the Universities were at different stages of the implementation process. Only 41.93% of respondents note that the implementation is complete; 22.58% are still in the planning stage; 12.9% at the implementation stage; and 22.59% undertaking a pilot study.

Table 7.31: Stage of ABC Implementation

Stage of ABC implementation	Number	Percentage
Planning and design stage	7	22.58
Developing and installing ABC, as well as training employees	4	12.90
Implementing ABC as a pilot project	7	22.59
Fully implemented	13	41.93
Total	31	100.00

7.12.4 The Expectations and Actual Benefit of ABC Implementation

A number of studies have investigated the expected benefits and actual benefits of adopting ABC (Baird 2007; Cagwin & Bouwman 2002; Clarke, Hill & Stevens 1999; Cohen, Kaimenaki & Zorgios 2007 2005; Jongruksut 2002; Malmi 1997; Pavlatos & Paggios 2009). For example Clarke, Hill & Stevens (1999) found that the respondents were more satisfied with the actual benefit on every dimension of ABC than they anticipated. To further examine the expected benefits and actual benefits of ABC, the respondents were asked to rate the level of agreement as to a number of factors relating the benefits of ABC adoption. Table 7.32 details the findings, and shows that the university's ability to meet government reporting requirement for unit cost (Royal Decree 21) was the highest ranked factor (mean=4.38), followed by more accurate cost information for performance measurement and decision-making (mean=4.25), improved budgeting by identifying the cost/performance relationship of different service levels (mean=4.22) and improved cost control (mean=4.19). These findings are in line with previous studies (Clarke, Hill & Stevens 1999; Hussain, Gunasekaran & Laitinen 1998; Tayles & Drury 2001) that identified the major perceived benefits from ABC adoption were more accurate cost information, improved cost control (Clarke, Hill & Stevens 1999; Hussain, Gunasekaran & Laitinen 1998) and cost reduction (Innes & Mitchell 1995).

Table 7.32: Expected Benefits from adoption of ABC

Expected benefits N=31	Expected benefit (mean scores)	Standard Deviation
Ability to meet government reporting requirement for unit cost (Royal Decree 21)	4.38	0.71
More accurate cost information	4.25	0.81
Improved cost information for performance measurement	4.25	0.72
Improved cost information for decision-making	4.25	0.72
Improved budgeting by identifying the cost/performance relationship of different service levels	4.22	0.80
Improved cost control	4.19	0.70

Additionally, respondents were asked to rate the level of agreement as to the actual benefits that their university has gained from implementing ABC. Table 7.33 shows that the ability to meet government reporting requirement for unit cost (Royal Decree No. 21) was the highest ranked benefit (mean=4.22). Respondents also reported that they

had gained benefit from ABC in terms of improved cost information for decision-making (mean=4.06) and improved budgeting by identifying the cost/performance relationship of different service levels (mean=4.03). This is similar to the findings reported by (Cagwin & Bouwman 2002; Clarke, Hill & Stevens 1999; Jongruksut 2002; Malmi 1997) that ABC users realized a perceived benefit in terms of increasing the effectiveness of the budget.

Table 7.33: Actual Benefit from Adoption of ABC

Actual benefits	Mean	Standard Deviation
Ability to meet government reporting requirement for unit cost (Royal Decree 21)	4.22	0.80
Improved cost information for decision-making	4.06	0.89
Improved budgeting by identifying the cost/performance relationship of different service levels	4.03	0.87
Improved cost control	3.96	0.87
More accurate cost information	3.93	0.72
Improved cost information for performance measurement	3.93	0.81

A comparison of the respondents' perception between the expected and actual benefits of ABC adoption is detailed in Table 7.34. The finding show there is significant and positive difference between the expected and actual benefits from ABC adoption. According to the mean scores the benefits that respondents actually gained from the ABC adoption was slightly lower than those of the expected benefits. Respondents are more dissatisfied in relation to every benefit. Moreover there was a statistically significant ($P < 0.05$) difference between the expected and actual benefit in relation to: more accurate cost information ($P = 0.023$), improved cost information for performance measurement ($p = 0.031$) and ability to meet government reporting requirement for unit cost data (Royal Decree 21) ($P = 0.023$). This is dissimilar to findings of other researchers who compared the expected and actual benefits of ABC in the private sector (Cagwin & Bouwman 2002; Clarke, Hill & Stevens 1999; Jongruksut 2002; Malmi 1997).

The findings show that in Thai public universities the actual benefit of ABC is slightly lower than the expected benefit than that experienced in the private sector. This could imply that there are significant differences between the public sector and private sector perspective about the perceived benefits of ABC. The finding of this study supports the

view of Broad & Crowther (2000) who studied ABC in UK universities. They identified that the original purpose of ABC was to identify more accurate costs in the universities but the complexity of the ABC techniques led to difficulties in its application in the universities. Also in the case of Thai public universities the likely reason for the perceived actual benefits of ABC being slightly lower than the expected benefits, may be due to the lack of understanding of the change process and the time and resources necessary to fully implement ABC. As mentioned previously Thai university accountants would not have had prior experience with computerised costing systems.

Table 7.34: Comparison between Expected Benefit and Actual Benefit of ABC

Comparison between expected benefit and actual benefit of ABC	Expected benefit (mean scores)	Actual benefit (mean scores)	T-Test Paired differences	Sig. (2 tailed)
More accurate cost information	4.25	3.93	0.32	0.023
Improved cost information for performance measurement	4.25	3.93	0.32	0.031
Improved budgeting by identifying the cost/performance relationship of different service levels	4.22	4.03	0.19	0.296
Improved cost information for decision-making	4.25	4.06	0.19	0.280
Improved cost control	4.19	3.96	0.22	0.198
Ability to meet government reporting requirement for unit cost (Royal Decree 21)	4.38	4.22	0.16	0.023

7.12.5 Problem during ABC Implementation

As noted in previous studies implementation of ABC is not without its problems. Respondents were asked to rate the level of importance of a number of factors that may have hindered or been barriers to the ABC implementation. The highest rated factors were the lack of appropriate software support (mean=3.77), difficulty in gathering data on cost drivers (mean=3.77), lack of accounting staff support (mean=3.74) and difficulty in defining cost drivers (mean=3.70). However, lack of support by top management (mean=2.80) was found to have the lowest mean ranking. This seems to support findings shown in Table 7.17 that the highest ranked facilitator of accounting change was strong support from top management. The findings also reveal that Thai public universities are facing technology problems associated with the ABC implementation as software packages being used do not appear to have a good fit with the financial management system. As noted by respondents:

“...my university employed software package company to develop ABC program but it was not appropriate for my university system and when I asked the company to make some change specifically for my university it appears that it can be changed but still have problem with another that unable to resolve. It like when you repair the tap you can close this hole on the tap but you still have another hole which cannot be close ...”.

“...my university met difficulty with ABC implementation because the software package didn’t match some information which the university needed. Thus, my university combined software package and internal developed software...”.

The problems associated with ABC detailed in Table 7.35 are similar to those identified by Venieris & Cohen (2004) in that the lack of appropriate software package and the lack of accounting staff slowed the speed of accounting reform.

Table 7.35: Problem During ABC Implementation

Problem during ABC implementation	Mean	Stdandard Deviation
Lack of appropriate software support	3.77	1.17
Difficult in gathering data on cost drivers	3.77	1.14
Lack of accounting staff support	3.74	1.09
Difficulty in defining cost drivers	3.70	1.07
Shortcomings at the planning and design stages of the ABC project	3.67	1.13
Time taken to collect data	3.67	0.87
High cost of implementing ABC	3.61	1.05
Lack of external consultants	3.58	1.14
Difficult in integrating ABC with current accounting system	3.58	0.92
Lack of clear understanding by employees in the initial stage of ABC implementation	3.45	1.28
Lack of a clearly defined plan for ABC implementation	3.38	1.30
Too costly to get cost information	3.38	1.05
Difficulty in identifying university activities	3.32	1.07
Lack of government support	3.16	1.21
Lack of top management (president and university committee) commitment to ABC implementation	2.80	1.07

7.12.6 The Success Level of ABC Implementation

The degree of success achieved in relation to the ABC implementation is presented in Table 7.36. Success was determined by each respondent’s perception of the ABC outcomes at their university. Of the 31 universities that have adopted ABC (refer table 7.28) the majority of respondents (77.42%) are unable to assess at this stage whether the

implementation has been successful, 6.45% rate it as unsuccessful, and 16.13% have made the successful transition to ABC.

Table 7.36: The Success Level of the ABC Implementation

The success level of the ABC implementation	Number	Percentage
Unsuccessful	2	6.45
Successful	5	16.13
Unable to assess at this stage	24	77.42
Total	31	100.00

Comments from respondents further explain why universities are unable to assess at this stage and also reinforce the barriers identified in Table 7.35.

- “...Difficulty in gathering data on cost driver...”*
- “...Difficulty in cost allocation (direct and indirect cost)...”*
- “... University budgetary allocation not associated with university activity costing...”*
- “... Lack of completed software program to record data...”*
- “...Cost reporting system to collecting cost data is very slow...”*
- “... Lack of internal and external consultant for cost accounting...”*
- “... University spending (operation) base on receiving budget allocation not associated with actual cost of university..”*
- “...Lack of well defined cost activity at my university...”*
- “...Spending budget base on source of revenue but university activity not base on revenue..”*
- “... Not enough gathering cost data...”*
- “...University staff lack of experience in cost accounting...”*

Further analysis was undertaken to investigate the relationship between the level of success achieved in the adoption of ABC and the perceived benefits to the university from ABC. A one-way ANOVA (analysis of variances) was performed to test this. Table 7.37 reveals that there was a significant ($P < 0.05$) relationship between the level of success and improved budgeting by identifying the cost/performance relationship of different service levels ($P = 0.023$), and improved cost information for decision-making ($P = 0.025$), and improved cost control ($P = 0.026$). A check of the mean scores shows that respondents who rate their university’s ABC implementation as successful level are more likely to have achieved such benefits from ABC adoption.

Table 7.37: Perceived Actual Benefit of ABC on Level of Success of the ABC Implementation

Perceived Actual benefit	Level of success of the ABC implementation	ANOVA				
		N	Mean	Standard Deviation	F	P-Value
More accurate cost information	Unsuccessful	2	3.00	0.00	3.048	0.063
	Successful	5	4.40	0.54		
	Unable to assess at this stage	24	3.91	0.71		
	Total	31	3.93	0.72		
Improved cost information for performance measurement	Unsuccessful	2	3.00	0.00	2.332	0.116
	Successful	5	4.40	0.54		
	Unable to assess at this stage	24	3.91	0.82		
	Total	31	3.93	0.81		
Improved budgeting process due to the ability to identify the cost/performance relationship of different service levels	Unsuccessful	2	2.50	0.70	4.339	0.023
	Successful	5	4.40	0.54		
	Unable to assess at this stage	24	4.08	0.82		
	Total	31	4.03	0.87		
Improved decision-making	Unsuccessful	2	2.50	0.70	4.237	0.025
	Successful	5	4.40	0.54		
	Unable to assess at this stage	24	4.12	0.85		
	Total	31	4.06	0.89		
Improved cost control	Unsuccessful	2	2.50	0.70	4.167	0.026
	Successful	5	4.40	0.54		
	Unable to assess at this stage	24	4.00	0.83		
	Total	31	3.96	0.87		
Ability to meet government reporting requirement for unit cost data (Royal Decree 21)	Unsuccessful	2	4.50	0.70	0.284	0.755
	Successful	5	4.40	0.54		
	Unable to assess at this stage	24	4.16	0.86		
	Total	31	4.22	0.80		

(P < 0.05 = significant)

7.12.7 Reason for Non-Adoption of ABC

The universities that have not adopted ABC can be broken into two groups – group 1 those universities that do not plan to adopt ABC and group 2 those universities that plan to adopt ABC in future. As shown in Table 7.38, 20.60% of universities do not plan to adopt ABC (group 1) and 30.16% of universities plan to adopt ABC in the future (group 2). To identify the possible reasons for non-adoption respondents were asked to rate

their level of agreement to a number of factors. The results are summarized in Table 7.38.

In relation to group 1 the highest -ranked reason for non-adoption was difficulty in collecting cost data (mean=4.23), costly to use ABC (mean=4.15), lack of expertise to implement ABC (mean=4.07), and difficulty in selecting appropriate software package (mean=4.00). For group 2 the highest -ranked reason for those universities planning to adopt ABC in the future was lack of expertise to implement ABC (mean=4.36), lack of external consultant (mean=4.36), difficulty in collecting cost data (mean=4.10), difficulty in selecting appropriate software package (mean=4.05) and costly to use ABC (mean=3.89). These findings suggest knowledge of ABC implementation is the most important reason for the non-adoption of ABC in Thai public universities. Although, the Comptroller General’s Department have given guidelines to prepare the cost report by activity to their government agencies there is little guidance on how to setup the ABC system.

However, there is a significant difference ($P<0.05$) between the two groups of not adopting ABC in terms of difficulty in selecting appropriate software package ($P=0.018$). Table 7.38 shows that Group 2 has a higher mean score for difficulty in selecting appropriate software package higher than Group 1.

Table 7.38: Reason for Not Adopting ABC

Reason for not Adopting ABC	Group 1 Have not Adopted ABC (N=13)		Group 2 Planning to Adopt ABC (N=19)		Sig
	Mean	Ranking	Mean	Ranking	
The current costing system provides enough cost information	2.38	9	2.31	7	0.712
Top management of university (president and university committee) not imposing the implementation of ABC	3.30	7	3.84	5	0.432
Lack of government budgeting support	3.53	6	3.47	6	0.618
Difficulty in collecting cost data	4.23	1	4.10	2	0.824
Costly to use ABC	4.15	2	3.89	4	0.602
Difficulty in selecting appropriate software package	4.00	4	4.05	3	0.018
Lack of expertise to implement ABC	4.07	3	4.36	1	0.242
Lack of external consultant	3.84	5	4.36	1	0.189
University makes use of a cost methodology other than ABC	2.69	8	2.94	8	0.757

N=32 (have not adopted ABC (N =13) and have not but planning to adopt ABC (N = 19)

7.13 Conclusion

This chapter contributes to the current knowledge of NPM financial management reform in a developing country, Thailand. The study explored both financial accounting and costing practices. In summary at least seven key findings appear to have emerged from the survey data which are worthy of special note:

1. The majority of universities are implementing changes to both the financial and management accounting systems, however, to date only a small percentage have been able to successfully complete the process.

2. The stimuli for accounting change was driven by government reporting requirements which required Universities to move from a manual cash based accounting system to a computerised accrual based accounting system, in line with NPM. The changing nature of the University sector with Universities moving to autonomous status, and the need for all Universities to be more accountable have been important factors internally to promote accounting change to enable the provision of more relevant information for reporting purposes.

3. The major barrier to accounting reform relates to the lack of technological resources such as lack of appropriate software packages and existing technology being unable to cope with the new government reporting requirements. Other problems relate to the lack of key producers of change, such as not having enough full-time accounting staff, lack of staff with expertise in information systems and lack of internal staff to monitor the change process. Other barriers include difficulty in designing a new financial system and lack of understanding and knowledge of data requirements. These factors have led to delays in the government accounting reform. However, staff resistance to accounting change was not found to be a barrier in the case of Thai public universities.

4. Both internal and external promoters of change were important to support the success of the change in Thai public universities. The major internal promoter was the top management of the university. The findings suggest that if there is strong enough support from top management which can be evidenced by the employment of adequate full time accounting staff with knowledge of private sector accounting practices and a

willingness to invest in technology resources (IT staff and resources) then the pace of change will be faster. The Comptroller General's Department and the Office of Higher Education were the key external promoters of change in Thai public universities. Furthermore, the training programs from the government and within the university were found to support and encourage the diffusion of knowledge necessary for the accounting change.

5. The majority of universities (31 universities) have adopted ABC, however, only a minority have completed the process. The most important benefit from the ABC adoption was the ability to meet the government requirements for unit costing. High levels of external and internal authorities were important in the decision to adopt ABC. However, the perceived benefits of ABC were slightly lower than expected benefit in Thai public universities. The reason for this finding could be that the university staff lacked an understanding of the change process and the time and resources necessary to fully implement ABC.

6. Problems identified during the ABC implementation were lack of necessary resources, such as an appropriate software package, and difficulty in gathering data on cost drivers.

7. The majority of universities (32 universities) that had not adopted ABC lack the necessary resources and knowledge to implement changes to the costing system. The universities experienced difficulty in either collecting cost data or found it too costly to implement ABC.

The next chapter will further examine the findings to identify whether there are any university characteristics that may cause differences in the adoption of accounting practices in line with Thai public sector reform. The following chapter will use factor analysis to further explore other issues such as the stimuli for change (both internal and external), barriers to and facilitators of change in Thai public universities.

Chapter 8

Further Analysis of Findings - I

8.1 Introduction

In this chapter a further analysis of the survey findings will be undertaken. The focus of the analysis will be on whether the different characteristics of Thai public universities (such as status, age and size) have any influence on the accounting reform undertaken by the university. Later in the chapter a further analysis will be undertaken of those universities that have either been successful or unsuccessful with completing the accounting changes.

8.2 University Characteristics and Accounting System Change

There are a number of factors that may differentiate the Thai public universities in this study. For example:

- Type of university - whether or not autonomous
- Age of university
- Number of campuses
- Number of students

8.2.1 Characteristic of University on Individual Accounting Systems Change

To investigate whether the characteristics of the university may impact on accounting change, ANOVA was undertaken to identify any potential differences (Hair 2007; Pallant 2006). The findings detailed in Table 8.1 (Panel A) show that the relationship between the importance of individual accounting system changes and the type of university is statistically significant ($P < .05$). Significant differences in the mean scores were identified in relationship to changes to the financial accounting system ($P = 0.034$), budgeting system ($P = 0.040$) and cost accounting system ($P = 0.037$), however, not with the performance measurement system ($P = 0.264$) and auditing system ($P = 0.192$).

Further analysis of the mean scores identified that autonomous public universities, and those in the process of becoming autonomous reported the highest level of importance on the accounting system changes. It may be that these universities have given more importance to these systems as they may have more pressure to complete the changes due to the need for self management of financial resources.

However, there is no significant relationship between the type of university and the importance of change to either the performance measurement or auditing systems. Rangsungnean (2008) who studied performance measurement in Thai public universities notes that no matter whether Thai public universities are autonomous or not, universities must find ways to improve performance measurement in their universities. Also in relation to the auditing system change the type of university did not influence the importance most likely due to the external audit being under the control of the Office of the Auditor General of Thailand and therefore applicable to all universities regardless of status (Office of the Comptroller General's Department 2006).

Table 8.1: Comparison between Characteristics of University on Accounting System

Panel A: A comparison between type of universities and the importance of accounting system change						
The importance on the type of accounting system change	Characteristic of university	ANOVA				
		N	Mean	Stdandard Deviation	F	P-Value
Financial accounting system	Non autonomous public university	39	4.41	0.55	3.577	0.034
	In the process of becoming autonomous public university	11	4.45	0.52		
	Autonomous public university	13	4.85	0.38		
	Total	63	4.51	0.54		
Budgeting system	Non autonomous public university	39	4.26	0.55	3.410	0.040
	In the process of becoming autonomous public university	11	4.45	0.52		
	Autonomous public university	13	4.69	0.48		
	Total	63	4.38	0.55		
Cost accounting system	Non autonomous public university	39	4.08	0.62	3.494	0.037
	In the process of becoming autonomous public university	11	4.64	0.50		
	Autonomous public university	13	4.31	0.75		
	Total	63	4.22	0.66		
Performance measurement system	Non autonomous public university	39	4.10	0.68	1.364	0.264
	In the process of becoming autonomous public university	11	4.45	0.52		
	Autonomous public university	13	4.31	0.75		
	Total	63	4.21	0.68		
Auditing system	Non autonomous public university	39	4.18	0.68	1.698	0.192
	In the process of becoming autonomous public university	11	4.55	0.52		
	Autonomous public university	13	4.46	0.77		
	Total	63	4.30	0.69		

n.sa= not significant.

* P<0.05

Panel B, C and D of Table 8.1 (B = number of campuses, C = age of university and D = number of student) details the results of the analysis on these characteristics and the importance of accounting systems changes. The findings show there are no significant relationships between the characteristics of the university and accounting system changes.

Table 8.1: A Comparison between Characteristic of University on Accounting System Change

Panel B: Comparison between Accounting change and size of university						
Type of accounting change	Size of university	ANOVA				
		N	Mean	Standard Deviation	F	P-Value
Financial accounting system	Less than 5 campuses	52	4.50	0.54	0.040	0.961
	5 – 11 campuses	9	4.56	0.52		
	More than 12 campuses	2	4.50	0.70		
	Total	63	4.51	0.54		
Budgeting system	Less than 5 campuses	52	4.36	0.56	0.123	0.884
	5 – 11 campuses	9	4.44	0.53		
	More than 12 campuses	2	4.50	0.71		
	Total	63	4.38	0.55		
Cost accounting system	Less than 5 campuses	52	4.17	0.68	0.831	0.441
	5 – 11 campuses	9	4.44	0.53		
	More than 12 campuses	2	4.50	0.71		
	Total	63	4.22	0.66		
Performance measurement system	Less than 5 campuses	52	4.19	0.68	0.197	0.822
	5 – 11 campuses	9	4.22	0.66		
	More than 12 campuses	2	4.50	0.71		
	Total	63	4.21	0.68		
Auditing system	Less than 5 campuses	52	4.29	0.70	0.100	0.905
	5 – 11 campuses	9	4.33	0.71		
	More than 12 campuses	2	4.50	0.71		
	Total	63	4.30	0.69		

n.sa= not significant.

* P<0.05

Table 8.1: A Comparison between Characteristics of University on Accounting System Change

Panel C: A Comparison between Accounting change and the age of university						
Type of accounting change	Old of university	ANOVA				
		N	Mean	Standard Deviation	F	P-value
Financial accounting system	Less than 10 years	39	4.41	0.55	2.234	0.094
	11 - 30 years	5	5.00	0.00		
	31 - 50 years	10	4.50	0.53		
	More than 50 years	9	4.67	0.50		
	Total	63	4.51	0.54		
Budgeting system	Less than 10 years	39	4.26	0.55	2.202	0.097
	11 - 30 years	5	4.80	0.45		
	31 - 50 years	10	4.50	0.53		
	More than 50 years	9	4.56	0.53		
	Total	63	4.38	0.55		
Cost accounting system	Less than 10 years	39	4.08	0.62	2.033	0.119
	11 - 30 years	5	4.40	0.89		
	31 - 50 years	10	4.60	0.52		
	More than 50 years	9	4.33	0.71		
	Total	63	4.22	0.66		
Performance measurement system	Less than 10 years	39	4.10	0.68	0.816	0.490
	11 - 30 years	5	4.40	0.89		
	31 - 50 years	10	4.40	0.70		
	More than 50 years	9	4.33	0.50		
	Total	63	4.21	0.68		
Auditing system	Less than 10 years	39	4.18	0.68	1.619	0.195
	11 - 30 years	5	4.80	0.45		
	31 - 50 years	10	4.50	0.71		
	More than 50 years	9	4.33	0.71		
	Total	63	4.30	0.69		

n.sa= not significant.

* P<0.05

Table 8.1: A Comparison between Characteristics of University on Accounting System Change

Panel D: Comparison between Accounting change and number of student of university						
Type of accounting change	Number of student of university	ANOVA				
		N	Mean	Standard Deviation	F	P-value
Financial accounting system	2000-5000	7	4.43	0.53	0.091	0.965
	5001-10000	22	4.50	0.60		
	10001-20000	20	4.55	0.51		
	More than 20000	14	4.50	0.52		
	Total	63	4.51	0.54		
Budgeting system	2000-5000	7	4.14	0.38	1.396	0.253
	5001-10000	22	4.50	0.60		
	10001-20000	20	4.25	0.55		
	More than 20000	14	4.50	0.52		
	Total	63	4.38	0.55		
Cost accounting system	2000-5000	7	4.00	0.58	1.428	0.244
	5001-10000	22	4.09	0.68		
	10001-20000	20	4.25	0.72		
	More than 20000	14	4.50	0.52		
	Total	63	4.22	0.66		
Performance measurement system	2000-5000	7	3.71	0.49	1.852	0.148
	5001-10000	22	4.18	0.85		
	10001-20000	20	4.25	0.44		
	More than 20000	14	4.43	0.65		
	Total	63	4.21	0.68		
Auditing system	2000-5000	7	4.29	0.49	0.841	0.477
	5001-10000	22	4.14	0.83		
	10001-20000	20	4.35	0.59		
	More than 20000	14	4.50	0.65		
	Total	63	4.30	0.69		

n.sa= not significant.

* P<0.05

8.2.2 Characteristics of University on the Stage of Accounting Change

To investigate further how characteristics of the university may impact on the stage of accounting change (that is whether in the planning stage, implementation stage or completed), ANOVA was conducted to test for any significant relationship. From Panel A of Table 8.2 the type of university was found to have a significant ($P < 0.05$) relationship with the stage of change in the financial accounting system ($P = 0.001$), management accounting systems (budgeting system ($P = 0.041$), performance measurement system ($P = 0.000$) and auditing system with the exception of the cost accounting system ($P = 0.397$). A closer look at the mean scores indicates that the autonomous public universities and those universities in the process of becoming autonomous reported the highest means in relation to the stage of accounting change. The means were financial accounting system (mean=2.54), budgeting system (mean=2.31), performance measurement (mean=2.53) and auditing system (mean=2.38). This shows that such universities were more advanced in the change process in that they were either in the implementation stage or completed stage. It may be that such universities have more autonomy administratively from the government to influence the speed of change than those universities that have not gone down the transformation to becoming an autonomous university. In contrast to stage of completion the cost accounting system implementation has no relationship with the type of university. This can be explained by the findings in Chapter 7 which showed that the majority of universities were experiencing difficulties with the implementation of the costing system.

Table 8.2: A Comparison between Stage of Accounting change and type of University

Panel A: A comparison between accounting change and type of universities						
Stage of accounting change	Characteristic of university	ANOVA				
		N	Mean	Standard Deviation	F	P-Value
Financial accounting system	Non autonomous public university	39	1.90	0.50	7.810	0.001
	In the process of becoming autonomous public university	11	2.27	0.65		
	Autonomous public university	13	2.54	0.52		
	Total	63	2.10	0.59		
Budgeting system	Non autonomous public university	39	1.90	0.50	3.372	0.041
	In the process of becoming autonomous public university	11	2.10	0.54		
	Autonomous public university	13	2.31	0.48		
	Total	63	2.02	0.52		
Cost accounting system	Non autonomous public university	39	1.87	0.52	0.939	0.397
	In the process of becoming autonomous public university	11	2.10	0.30		
	Autonomous public university	13	2.00	0.58		
	Total	63	1.94	0.50		
Performance measurement system	Non autonomous public university	39	1.72	0.55	10.857	0.000
	In the process of becoming autonomous public university	11	2.10	0.30		
	Autonomous public university	13	2.53	0.66		
	Total	63	1.97	0.62		
Auditing system	Non autonomous public university	39	1.72	0.56	6.470	0.003
	In the process of becoming autonomous public university	11	2.10	0.70		
	Autonomous public university	13	2.38	0.65		
	Total	63	1.92	0.66		

n.sa= not significant.

* P<0.05

Interestingly, Panel C of Table 8.2 reports that there is a significant ($P < 0.05$) relationship with the age of the university and the stage of change to the financial accounting system ($P = 0.002$), the management accounting systems (budgeting system $P = 0.049$) and performance measurement system ($P = 0.000$) and auditing system ($P = 0.004$) with the exception of cost accounting system ($P = 0.095$). Examination of the mean scores identifies those universities aged 31-50 years reported higher means in relation to the stage of accounting change. The mean scores were: financial accounting system (mean=2.60), budgeting system (mean=2.40) and auditing system (mean=2.50). However, the highest mean score for the performance measurement system (mean=2.60) was for universities aged between 11-30 years.

It may be that universities that have been operating for 31 -50 years have more experience and are more ready administratively to pursue change. For example, the King Mongkut University of Technology Thonburi (KMUTT) is a mid-age university (establish 1964) in Thailand. KMUTT was ready administratively to change its accounting systems and this led to KMUTT being the first university to successfully transform to become an autonomous public university in Thailand (Kiratikarn 2002). A further analysis of the findings indicated that there was a significant relationship ($P < 0.05$) between the age of the university and the type of university. A closer look at the findings showed that all 39 non-autonomous universities were less than 10 years old, the majority of universities still in the process of transitioning to autonomous status were 31 to 50 years old and the majority of autonomous universities more than 50 years old.

Table 8.2: A Comparison between Stage of Accounting change and Type of University

Panel C: A Comparison between Accounting change and older of university						
Stage of accounting change	Old of university	ANOVA				
		N	Mean	Standard Deviation	F	P-value
Financial accounting system	Less than 10 years	39	1.90	0.50	5.50	0.002
	11 - 30 years	5	2.40	0.55		
	31 - 50 years	10	2.60	0.70		
	More than 50 years	9	2.22	0.44		
	Total	63	2.10	0.59		
Budgeting system	Less than 10 years	39	1.90	0.50	2.78	0.049
	11 - 30 years	5	2.00	0.00		
	31 - 50 years	10	2.40	0.70		
	More than 50 years	9	2.11	0.33		
	Total	63	2.02	0.52		
Cost accounting system	Less than 10 years	39	1.87	0.52	2.22	0.095
	11 - 30 years	5	1.80	0.45		
	31 - 50 years	10	2.30	0.48		
	More than 50 years	9	1.89	0.33		
	Total	63	1.94	0.50		
Performance measurement system	Less than 10 years	39	1.74	0.55	7.80	0.000
	11 - 30 years	5	2.60	0.55		
	31 - 50 years	10	2.50	0.53		
	More than 50 years	9	2.00	0.50		
	Total	63	1.97	0.62		
Auditing system	Less than 10 years	39	1.72	0.56	5.01	0.004
	11 - 30 years	5	2.20	0.84		
	31 - 50 years	10	2.50	0.71		
	More than 50 years	9	2.00	0.50		
	Total	63	1.92	0.66		

n.sa= not significant.

* P<0.05

8.2.3 Characteristic of University on the Achieved Level of Accounting Change

Further analysis was undertaken to investigate how characteristics of Thai public universities impact on the achieved level of accounting change. Panel A of Table 8.3 reveals that there is no statistically significant relationship found between the the type of university on the achieved level of success for each type of accounting system change (financial accounting (P=0.17), budgeting system (P=0.71), cost accounting system (P=0.62), performance measurement system (P=0.68) and auditing system (P=0.87)). Additionally, the number of campuses, the age of the university and the number of students also no relationships with the achieved level of accounting change.

Table 8.3: Characteristic of University on the Achieved Level of Accounting Change

Panel A: A comparison between the achieved of accounting change and type of universities						
Achieved of accounting system change	Characteristic of university	ANOVA				
		N	Mean	Standard Deviation	F	P-Value
Financial accounting system	Non autonomous public university	39	3.15	1.04	1.810	0.172
	In the process of becoming autonomous public university	11	3.64	0.92		
	Autonomous public university	13	3.62	0.65		
	Total	63	3.33	0.97		
Budgeting system	Non autonomous public university	39	3.36	0.96	0.340	0.713
	In the process of becoming autonomous public university	11	3.09	1.14		
	Autonomous public university	13	3.38	1.04		
	Total	63	3.32	0.99		
Cost accounting system	Non autonomous public university	39	2.82	0.96	0.474	0.625
	In the process of becoming autonomous public university	11	2.73	1.09		
	Autonomous public university	13	3.07	0.86		
	Total	63	2.85	0.94		
Performance measurement system	Non autonomous public university	39	2.92	1.08	0.382	0.684
	In the process of becoming autonomous public university	11	2.64	1.02		
	Autonomous public university	13	3.00	1.15		
	Total	63	2.89	01.07		
Auditing system	Non autonomous public university	39	2.74	1.02	0.132	0.876
	In the process of becoming autonomous public university	11	2.63	1.03		
	Autonomous public university	13	2.85	0.89		
	Total	63	2.75	0.98		

n.sa= not significant.

* P<0.05

8.2.4 Barriers to Change on the Achieved Level of Accounting Change

According to the finding in the previous section there is no statistically significant relationship that can be concluded between the characteristics of the universities on the achieved level of success of the accounting change. Further analysis was undertaken to identify whether there were other factors that may influence the level of success achieved. The barriers to accounting change discussed in section 7.7 were tested against the achieved level of success achieved in the accounting system change to identify possible differences. The findings indicate that there was a significant relationship ($P < 0.05$) for only one factor - not enough full-time staff. Table 8.4 reports the findings of the analysis and indicates the significant relationship between the level of lack of full-time staff on the achieved level of success of the: financial accounting system ($P = 0.033$), budgeting system ($P = 0.014$), cost accounting system ($P = 0.003$), performance measurement system ($P = 0.010$) and auditing system ($P = 0.047$).

A closer look at the mean scores identified that those universities that rated the system changes as unsuccessful gave the highest rating to the lack of full time staff in relation: financial accounting (mean=4.57), budgeting system (mean=4.75), cost accounting system (mean=4.33), performance measurement system (mean=4.75) and auditing system (mean=4.45). This supports Bowornwathana (2000) who found that the government reform in Thailand has a long way to go because the government officers who work in the reform project do not work full-time on the reform. For example, local university lecturers were invited to a series of meetings to assist with the analysis of the consultants' reports, and assist in developing guidelines on how to implement the changes recommended (Office of the Comptroller General's Department 2006).

Table 8.4: Barriers to Change on the Achieved Level of Accounting Change

Barriers to change (Not enough full-time staff)	Achieved of accounting system change	ANOVA				
		N	Mean	Standard Deviation	F	P-Value
Financial accounting system	No change made	3	2.33	1.52	3.107	0.033
	Unable to assess at this stage	13	3.69	1.18		
	Unsuccessful	7	4.57	0.53		
	Successful	40	3.77	1.07		
	Total	63	3.77	1.12		
Budgeting system	No change made	3	2.66	2.08	2.07	0.014
	Unable to assess at this stage	15	3.73	0.96		
	Unsuccessful	4	4.75	0.50		
	Successful	41	3.80	1.10		
	Total	63	3.77	1.11		
Cost accounting system	No change made	2	1.50	0.70	5.15	0.003
	Unable to assess at this stage	27	3.92	1.07		
	Unsuccessful	12	4.33	0.65		
	Successful	22	3.50	1.14		
	Total	63	3.77	1.12		
Performance measurement system	No change made	6	2.83	1.47	4.122	0.010
	Unable to assess at this stage	22	3.86	0.94		
	Unsuccessful	8	4.75	0.46		
	Successful	27	3.62	1.14		
	Total	63	3.77	1.12		
Auditing system	No change made	4	2.75	1.70	2.821	0.047
	Unable to assess at this stage	28	3.78	1.10		
	Unsuccessful	11	4.45	0.68		
	Successful	20	3.60	1.09		
	Total	63	3.77	1.12		

* P<0.05

8.2.5 Facilitators of Change on the Achieved Level of Accounting Change

To further understand the success level achieved by the universities, the 26 facilitators discussed in section 7.8 were tested against this variable. The findings indicate that there is a statistically significant relationship ($P < 0.05$) between some of the facilitators to change on the achieved level of success in relation to all the accounting systems (financial accounting, budgeting system, costing system, performance measurement system and auditing system).

Table 8.5 Panel A shows that the level of success achieved in the financial accounting system has a statistically significant relationship with the employment of an external consultant ($P < 0.05$) and having an understanding and knowledge of data requirements ($P < 0.05$). A closer look at the mean scores identifies that those universities who have rated the change as successful gave the highest ranking to these two facilitators: employment of an external consultant (mean=4.00) and having an understanding and knowledge of data requirements (mean=4.17). This highlights the importance of having the “right” people with the required systems knowledge.

Table 8.5: Facilitators of Accounting Change on Achieved Level of Accounting Change

Panel A: Financial accounting

Facilitators of accounting change	Achieved of financial accounting system change	ANOVA				
		N	Mean	Standard Deviation	F	P-Value
Employment external consultant	No change made	3	4.00	1.00	4.11	0.010
	Unable to assess at this stage	13	3.53	0.77		
	Unsuccessful	7	2.85	0.69		
	Successful	40	4.00	0.87		
	Total	63	3.77	0.90		
Understanding and knowledge of data requirement	No change made	3	2.66	0.57	3.36	0.025
	Unable to assess at this stage	15	3.84	1.06		
	Unsuccessful	4	3.85	0.37		
	Successful	41	4.17	0.81		
	Total	63	4.00	0.87		

Table 8.5 Panel B shows that the level of success achieved in the budgeting system has a statistically significant relationship ($P < 0.05$) with several of the facilitators. These were: a high level of involvement by the Office of Higher Education Commission under Ministry of Education ($P = 0.038$); an adequate number of internal staff to support the change process ($P = 0.033$); employment of an external consultant ($P = 0.002$); adequate number of full-time accounting staff ($P = 0.014$).

A closer look at the mean scores identifies that those universities who have rated the change as successful gave the highest ranking to these facilitators: high level of involvement by the Office of higher education commission under Ministry of Education (mean=4.04), adequate number of internal staff to support the change process (mean=4.24), employment of external consultant (mean=4.04) and adequate number of full-time accounting staff (mean=4.31)

Table 8.5: Facilitators of Accounting Change on Achieved Level of Accounting Change

Panel B: Budgeting System

Facilitators of accounting change	Achieved of budgeting system change	ANOVA				
		N	Mean	Standard Deviation	F	P-Value
High level of involvement by the Office of Higher Education commission under Ministry of Education	No change made	3	4.00	1.00	2.994	0.038
	Unable to assess at this stage	15	3.73	0.77		
	Unsuccessful	4	2.75	0.69		
	Successful	41	4.04	0.87		
	Total	63	3.88	0.90		
Adequate number of internal staff to support the change process	No change made	3	4.00	0.57	3.100	0.033
	Unable to assess at this stage	15	3.53	1.06		
	Unsuccessful	4	4.00	0.37		
	Successful	41	4.24	0.81		
	Total	63	4.04	0.87		
Employment of external consultant	No change made	3	4.00	0.57	5.616	0.002
	Unable to assess at this stage	15	3.26	1.06		
	Unsuccessful	4	2.75	0.37		
	Successful	41	4.04	0.81		
	Total	63	3.77	0.87		
Adequate number of full-time accounting staff	No change made	3	3.33	0.57	3.856	0.014
	Unable to assess at this stage	15	3.66	1.06		
	Unsuccessful	4	4.25	0.37		
	Successful	41	4.31	0.81		
	Total	63	4.11	0.87		

Table 8.5 Panel C shows that the level of success achieved in the costing system has a statistically significant relationship ($P < 0.05$) with several facilitators: adequate number of full-time accounting staff ($P = 0.026$); accounting staff involvement and commitment ($P = 0.038$); adequate number of full time accounting staff ($P = 0.019$); and autonomy from the government ($P = 0.001$).

A closer look at the mean scores identifies that those universities who have rated the change as successful gave the highest ranking to these facilitators: with adequate number of full-time accounting staff (mean=4.36), accounting staff involvement and commitment (mean=4.27) and autonomy from the government (mean=4.22). For those who have rated the change as unsuccessful gave the highest ranking to adequate number of full time accounting staff (mean=4.50). The possible explanation is that despite the change being unsuccessful the need for full-time staff was seen as an important facilitator for the change process.

Table 8.5: Facilitators of Accounting Change on Achieved Level of Accounting Change

Panel C: Costing System

Facilitators of accounting change	Achieved of Cost accounting system change	ANOVA				
		N	Mean	Standard Deviation	F	P-Value
Adequate number of full-time accounting staff	No change made	2	3.00	1.00	3.312	0.026
	Unable to assess at this stage	27	3.88	0.77		
	Unsuccessful	12	4.33	0.69		
	Successful	22	4.36	0.87		
	Total	63	4.11	0.90		
Accounting staff involvement and commitment	No change made	2	2.85	0.57	2.984	0.038
	Unable to assess at this stage	27	3.64	1.06		
	Unsuccessful	12	3.57	0.37		
	Successful	22	4.27	0.81		
	Total	63	3.97	0.87		
Adequate number of full time staff	No change made	2	3.00	0.57	3.562	0.019
	Unable to assess at this stage	27	3.92	1.06		
	Unsuccessful	12	4.50	0.37		
	Successful	22	4.31	0.81		
	Total	63	4.14	0.87		
Autonomy from the government	No change made	2	3.00	0.57	6.250	0.001
	Unable to assess at this stage	27	3.29	1.06		
	Unsuccessful	12	3.66	0.37		
	Successful	22	4.22	0.81		
	Total	63	3.68	0.87		

Table 8.5 Panel D shows that the level of success achieved in the performance measurement system has a statistically significant relationship ($P < 0.05$) with the following facilitators: adequate number of full-time internal staff to support the change process ($P = 0.037$); adequate number of full-time accounting staff ($P = 0.006$); university resources committed ($P = 0.047$); adequate resources for designing new system ($P = 0.006$); adequate computer resource ($P = 0.025$) and a well planned training program for staff ($P = 0.013$).

A closer look at the mean scores identifies that those universities who have rated the change as successful gave the highest ranking to these facilitators: adequate number of full-time internal staff to support the change process (mean=4.50); adequate number of full-time accounting staff (mean=4.00). However, for those universities where the change has been rated as unsuccessful gave the highest ranking to: university resources committed (mean=4.37); adequate resources for designing new system (mean=4.50); adequate computer resources (mean=3.86); and a well planned training program for staff (mean=4.37). These findings suggest that such universities view the technical resources as important facilitators for the change process.

Table 8.5: Facilitators of Accounting Change on Achieved Level of Accounting Change

Panel D: Performance Measurement

Facilitators of accounting change	Achieved of Performance Measurement system change	ANOVA				
		N	Mean	Standard Deviation	F	P-Value
Adequate number of internal staff to support the change process	No change made	6	4.00	0.63	3.007	0.037
	Unable to assess at this stage	22	3.68	0.94		
	Unsuccessful	8	2.85	0.53		
	Successful	27	4.50	0.69		
	Total	63	4.22	0.81		
Adequate number of full-time accounting staff	No change made	6	3.00	0.63	4.518	0.006
	Unable to assess at this stage	22	3.68	0.83		
	Unsuccessful	8	4.00	0.75		
	Successful	27	4.00	0.83		
	Total	63	3.79	0.84		
University resources committed	No change made	6	2.66	1.03	2.812	0.047
	Unable to assess at this stage	22	3.95	0.84		
	Unsuccessful	8	4.37	0.74		
	Successful	27	3.96	0.93		
	Total	63	3.88	0.96		
Adequate resources for designing new system	No change made	6	3.33	0.51	4.631	0.006
	Unable to assess at this stage	22	3.50	0.74		
	Unsuccessful	8	4.50	0.75		
	Successful	27	3.92	1.03		
	Total	63	3.79	0.91		
Adequate computer resource	No change made	6	2.79	0.57	3.359	0.025
	Unable to assess at this stage	22	3.17	1.06		
	Unsuccessful	8	3.86	0.37		
	Successful	27	3.51	0.81		
	Total	63	3.56	0.87		
Well planned training program for staff	No change made	6	3.33	0.51	3.928	0.013
	Unable to assess at this stage	22	3.59	0.85		
	Unsuccessful	8	4.37	0.74		
	Successful	27	4.11	0.75		
	Total	63	3.88	0.82		

Table 8.5 Panel E shows that the level of success achieved in the auditing system has a statistically significant relationship ($P < 0.05$) with adequate computing resource ($P = 0.015$); and an adequate level of staff with knowledge of information systems ($P = 0.018$).

A closer look at the mean scores identifies that those universities who have rated the change as unsuccessful gave the highest ranking to these facilitators: adequate computing resource (mean=4.27) and an adequate level of staff with knowledge of information systems (mean=4.63). These findings reinforce the importance of technical resources to support change.

Table 8.5: Facilitators of Accounting Change on Achieved Level of Accounting Change

Panel E: Auditing System

Facilitators of accounting change	Achieved of Auditing system change	ANOVA				
		N	Mean	Standard Deviation	F	P-Value
Adequate computing resources	No change made	4	3.50	1.00	3.804	0.015
	Unable to assess at this stage	28	3.42	0.83		
	Unsuccessful	11	4.27	0.90		
	Successful	20	4.10	0.85		
	Total	63	3.79	0.91		
Adequate level of staff with knowledge of information systems	No change made	4	3.50	1.00	3.627	0.018
	Unable to assess at this stage	28	3.82	0.77		
	Unsuccessful	11	4.63	0.50		
	Successful	20	4.05	0.82		
	Total	63	4.01	0.81		

In developing countries, although accounting reform in the public sector is more likely to be motivated by the government (Godfrey, Devlin & Merrouche 2001; Harun 2007), the success of the accounting reform is dependant on many factors. For example, Table 8.5 shows that in relationship to the financial accounting system, those Thai universities that rated their system change as successful gave high importance to the use of external consultants, and having staff with knowledge of what is required in the change process.

Otley (1999) mentioned that the success of accounting change depends on the ability of the organisation. Thus, any weaknesses in relation to the key actors (promoters, producers and users of reform) (Godfrey, Devlin & Merrouche 1996; Harun, 2009) and

lack of necessary resources (Mimba, Helden & Tillema 2007) may lead to barriers to change in developing country. Refer to analysis in chapter 7 (section 7.7), where discussion included the weakness of staff's ability in private accounting practice in Thai public universities, the lack of full-time staff and the lack of necessary facilities of accounting resource such as appropriate software packages may impact on the level of success of change.

In addition, the working culture of those who work in the public sector is also important. Changing the accounting system means changing the working culture of traditional accounting and adds more work which could lead to barriers. Although the Thai government has had the policy to impose accounting change since 2001 the findings show that each university is at a different stage of implementation. Further, despite all the universities following the same change agenda, each university has gone about the change in different ways due to the different level of resources available to each university in terms of staff and other resources. Perhaps this suggests the level of success is dependent on how people in the universities learn about new accounting innovation and understand what accounting information is required to meet the demands. This can be imply that in a developing country before change occurs those involved in the change process must be ready in terms of skill and knowledge and have all the necessary resources such as technology available to them to support the change process.

8.3 Test of Difference Characteristic of Thai Public University on the ABC Adoption Via Cross-Tabulation and Chi-Square

The impact of difference organisational characteristic on the adoption of ABC has been investigated in both the private sector (Cagwin & Bouwman, 2002; Clarke, Hill & Stevens 1999; Innes & Mitchell 1995; Pavlatos & Paggios 2009) and also in the public sector (Bjornenak 2000; Baird 2007; Jackson & Lapsley 2003; Malmi 1999).

The purpose of this section is to examine how the characteristics of Thai public universities impact on (1) the adoption of ABC (2) the adoption stage of ABC and (3) the success of ABC.

8.3.1 Characteristics of university on the adoption of ABC

This study has attempted to investigate how characteristics of the universities impact on the adoption of ABC. Table 8.6 shows the findings of the analysis looking at whether the different characteristics influence the adoption of ABC. However, the results of the chi-square test show that the type of university (autonomous and non-autonomous public university) is not associated with the ABC adoption ($P=0.88$). Also the other characteristics had no significant relationship ($P<0.05$): the number of campuses ($P=0.98$), the age of university ($P=0.66$) and number of student ($P=0.32$).

Table 8.6: Cross-Tabulations by Characteristic of University on the Adoption of ABC

Type of general information	Characteristic of university	Adopt ABC				Total	P-Value
		Adopt ABC	Adopt ABC but has abandoned	Not adopt ABC	Not adopt ABC but planned adopt in the future		
Type of university	Non autonomous public university (n= 39)	48.7%	0%	20.5%	30.8%	100%	.885
	In the process of becoming autonomous public university (n=11)	63.6%	0%	0%	36.4%	100%	
	Autonomous public university (n=13)	38.5%	0%	38.5%	23.1%	100%	
	Total (N=63)						
Number of campuses	Less than 5 campuses (n = 52)	46.2%	0%	23.1%	30.8%	100%	.980
	5 – 11 campuses (n=9)	77.8%	0%	11.1%	5.3%	100%	
	More than 12 campuses (n=2)	0%	0%	0%	100%	100%	
	Total (N=63)						
Age of university	Less than 10 years (n = 39)	48.7%	0%	20.5%	30.8%	100%	.662
	11 – 30 years (n=5)	60.0%	0%	40.0%	0%	100%	
	31-50 years (n=10)	60.0%	0%	10.0%	30.0%	100%	
	More than 50 years (n=9)	33.3%	0%	22.2%	44.4%	100%	
	Total (N=63)						
Number of students	1 - 5000 (n = 13)	28.6%	0%	28.6%	42.9%	100%	.324
	5001-10000 (n=39)	54.5%	0%	22.7%	22.7%	100%	
	10001-20000 (n=11)	40.0%	0%	15.0%	45.0%	100%	
	More than 20000	64.3%	0%	21.4%	14.3%	100%	
	Total (N=63)						
Work experience in university	Less than 5 years (n = 16)	46.7%	0%	26.7%	21.1%	100%	.675
	5 – 10 years (n=36)	54.5%	0%	9.1%	42.1%	100%	
	11 – 20 years (n=11)	52.6%	0%	26.3%	21.1%	100%	
	More than 20 years	28.6%	0%	28.6%	42.9%	100%	
	Total (N=63)						

n.sa= not significant.

* P<0.05

8.3.2 Characteristic of University on the Adoption Stage of ABC

Table 8.7 details the correlation between characteristics of the universities on the adoption stage of ABC (non- adoption, still in the planning stage and implemented stage).

The results show that no association was found between the characteristics of the universities (the type of university, size of university (number of campus, number of student) and the age of university) on the stage of ABC adoption ($P < .05$).

Table 8.7: Cross-Tabulations by Characteristic of University on the Adoption Stage of ABC

Characteristic of universities	Stage of ABC					
	No adoption	Still implementing	Implemented	Total	Chi-square	P-Value
Type of University						
Non autonomous public University (n=19)	21.1%	36.8%	42.1%	100%	0.285	0.991
In the process of becoming autonomous public university (n=7)	28.6%	28.6%	42.9%	100%		
Autonomous public University (n=5)	20.0%	40%	40%	100%		
Total (n=31)						
Size of university						
Less than 5 campuses (n=24)	20.8%	33.3%	45.8%	100%	0.667	0.716
5 – 11 campuses (n=7)	28.6%	42.9%	28.60%	100%		
More than 12 campuses	22.6%	35.5%	41.9%	100%		
Total (n=31)						
Age of universities						
Less than 10 years (n=19)	21.1%	36.8%	42.1%	100%	4.113	0.661
11 – 20 years (n=3)	33.3%	0%	66.7%	100%		
21 – 30 years (n=0)	0%	0%	0%	100%		
31 – 50 years(n=6)	16.7%	33.3%	50%	100%		
More than 50 years N=3)	33.3%	66.7%	0%	100%		
Total (n=31)						
Number of students						
Less than 2000 (n=2)	0%	0%	0%	100%	10.695	0.098
2000-5000 (n=12)	0%	0%	100%	100%		
5001-10001(n=0)	33.3%	50%	16.7%	100%		
10001-20000 (n=8)	0%	25%	75%	100%		
More than 20000 (n=9)	33.3%	33.3%	33.3%	100%		
Total (n=31)						
Work experience						
Less than 5 years	0%	28.6%	71.4%	100%	5.630	0.466
5 -1 0 years	33.3%	41.7%	25%	100%		
11 – 20 years	30%	30%	40%	100%		
More than 20 years	0%	50%	50%	100%		
Total (n=31)						

n.sa= not significant.

* P<0.05

8.3.3 Characteristics of university on the success level of the ABC adoption

Further analysis was undertaken to identify whether the characteristics of the universities has any relationship on the level of success of the ABC implementation. Table 8.8 details the correlation between the characteristics of the university on the level of success. The result of the chi-square test shows that the type of university (autonomous and non-autonomous public university) has no impact on the success of ABC ($P < 0.05$).

Further more, the size of the university as measured by both number of campuses and student cohort , and the age of the university had no impact on the success of ABC ($P < 0.05$).

Table 8.8: Cross-tabulations by Characteristic of University on the Success of ABC Implementation

Type of general information	Characteristic of university	Success level of ABC					
		Unsuccessful	Successful	Unable to assess at this stage	Total	Chi-Square	P-Value
Type of university	Non autonomous public university (n=19)	21.1%	36.8%	42.1%	100%	0.285	0.991
	In the process of becoming autonomous public university (n=7)	28.6%	28.6%	42.9%	100%		
	Autonomous public university (n=5)	20%	40%	40%	100%		
	Total (N=31)						
Number of campuses	Less than 5 campuses (n = 24)	20.8%	33.3%	45.8%	100%	0.667	0.716
	5 – 11 campuses (n=7)	28.6%	42.9%	28.6%	100%		
	More than 12 campuses (n=0)	22.6%	35.5%	41.9%	100%		
	Total (N=31)						
Age of university	Less than 10 years (n =19)	21.1%	36.8%	42.1%	100%	0.4.113	0.661
	11 – 30 years (n=3)	33.3%	0%	66.7%	100%		
	31-50 years (n=6)	16.7%	33.3%	50%	100%		
	More than 50 years (n=3)	33.3%	66.7%	0%	100%		
	Total (N=31)						
Number of students	5001-10000 (n=12)	0. %	0%	100%	100%	10.695	0.098
	10001-20000 (n=8)	33.3%	50%	16.7%	100%		
	More than 20000(n=9)	33.3%	33.3%	33.3%	100%		
	Total (N=31)						

n.sa= not significant.

* P<0.05

8.3.4 The ABC Problems on the Success Level of the ABC Adoption

According to the finding there is no statistically significant relationship found between the characteristic of the universities on the achieved level of success of ABC. To further test whether other factors influence the achieved level of success the 15 factors affecting ABC adoption (discussed in section 7.12.5) have been tested against the achieved level of success of ABC. The finding indicated that there was a significant relationship ($P < 0.05$) between a number of the items and the level of success achieved. Table 8.9 reveals that there is a statistically significant relationship found with the following factors and ABC success.

- Lack of a clearly defined plan for ABC implementation ($p=0.017$)
- Lack of a clear understanding by employees in the initial stage of ABC implementation ($p=0.010$)
- Lack of accounting staff support ($p=0.024$)
- Lack of appropriate software support ($p=0.036$)
- High cost of implementing ABC ($p=0.034$)
- Time taken to collect data ($p=0.021$)
- Difficulty in gathering data on cost drivers ($p=0.007$)
- Difficulty in defining cost driver ($p=0.005$)
- Difficulty in indentifying university activities ($p=0.038$)
- Difficulty in integrating ABC with current accounting system ($p=0.050$)
- Shortcomings at the planning and design stages of the ABC project ($p=0.005$)

A closer look at the mean scores for each of the above factors (refer table 8.9) shows that a higher mean ranking was given by those universities that have rated the ABC as unsuccessful.

Although ABC was promoted by the government and top management of the university the success level of the accounting change is more likely dependent on the ability of the university itself (Otley 1999). Weakness of key actors (producers and users of information) (Godfrey, Devlin & Merrouche 1996; Harun 2009) and the lack of necessary resources (Mimba, Helden & Tillema 2007) may act as barriers to change. In previous analysis (refer section 7.7) it was found that that weakness of accounting

staff's ability in ABC method, lack of full-time staff to implement ABC, the complexity of ABC method and lack of necessary facilities of accounting resource such as appropriate software package had an impact on the success of the change. This suggests that the level of success achieved in ABC depends on how people perceive the ABC problem and their ability to understand what is required. These findings also suggest that before the ABC adoption occurs those involved in the change process must be fully trained to understand what is required and be given the knowledge and skills to fulfill their responsibilities.

Table 8.9: The ABC Problems on Level of Success of the ABC Adoption

Problems	Level of success of the ABC implementation	ANOVA				
		N	Mean	Standard Deviation	F	P-Value
Lack of a clearly defined plan for ABC implementation	Unsuccessful	2	4.50	0.70	4.756	0.017
	Successful	5	2.00	1.41		
	Unable to assess at this stage	24	3.58	1.13		
	Total	31	3.38	1.30		
Lack of a clear understanding by employees in the initial stage of ABC implementation	Unsuccessful	2	4.50	0.70	5.409	0.010
	Successful	5	2.00	1.41		
	Unable to assess at this stage	24	3.66	1.09		
	Total	31	3.45	1.28		
Lack of accounting staff support	Unsuccessful	2	4.50	0.70	4.272	0.024
	Successful	5	2.60	1.34		
	Unable to assess at this stage	24	3.91	0.92		
	Total	31	3.74	1.09		
Lack of appropriate software support	Unsuccessful	2	4.50	0.70	3.756	0.036
	Successful	5	2.60	1.14		
	Unable to assess at this stage	24	3.95	1.08		
	Total	31	3.77	1.17		
High cost of implementing ABC	Unsuccessful	2	4.50	0.70	3.823	0.034
	Successful	5	2.60	1.51		
	Unable to assess at this stage	24	3.75	0.84		
	Total	31	3.61	1.05		
Time taken to collect data	Unsuccessful	2	4.50	0.70	4.474	0.021
	Successful	5	2.80	1.30		
	Unable to assess at this stage	24	3.79	0.65		
	Total	31	3.67	0.87		
Difficulty in gathering data on cost drivers	Unsuccessful	2	4.50	0.70	5.923	0.007
	Successful	5	2.40	1.51		
	Unable to assess at this stage	24	4.00	0.88		
	Total	31	3.77	1.14		
Difficulty in defining cost driver	Unsuccessful	2	4.50	0.70	6.457	0.005
	Successful	5	2.40	1.51		
	Unable to assess at this stage	24	3.91	0.77		
	Total	31	3.70	1.07		

(P < 0.05 = significant)

Table 8.9: The ABC Problems on the Success Level of the ABC adoption (Continues)

Problems	Level of success of the ABC implementation	ANOVA				
		N	Mean	Std. Deviation	F	P-Value
Difficulty in indentifying university activities	Unsuccessful	2	4.50	0.70	3.682	0.038
	Successful	5	2.40	1.51		
	Unable to assess at this stage	24	3.41	0.88		
	Total	31	3.32	1.07		
Difficulty in integrating ABC with current accounting system	Unsuccessful	2	4.50	0.70	3.335	0.050
	Successful	5	2.80	1.30		
	Unable to assess at this stage	24	3.66	0.76		
	Total	31	3.58	0.92		
Shortcomings at the planning and design stages of the ABC project	Unsuccessful	2	5.00	0.00	6.459	0.005
	Successful	5	2.40	1.51		
	Unable to assess at this stage	24	3.83	0.86		
	Total	31	3.67	1.13		

(P < 0.05 = significant)

8.4 Conclusion

In this chapter the characteristics of each university on the importance of accounting change, the stage of change and the success of change were discussed. The characteristics of the universities examined in this study include: the type of university whether autonomous university or not, the age of the university, the size of the university as measured by the number of campuses and the number of students. The study also tested these characteristics on ABC (the adoption of ABC, the stage of ABC and the success of ABC). In addition further analysis was undertaken to understand more about the factors that may impact on the level of success achieved by the universities. Based on the findings discussed in this chapter, several conclusions can be drawn.

1. The type of university has a significant relationship ($P < 0.05$) with changes to the financial accounting system, budgeting system and cost accounting system. Universities that are autonomous or transitioning to autonomous status place more importance on these system changes. However, no statistically significant relationship was found with the performance measurement system and auditing system.

2. There is statistically significant relationship between the size of the university (number of campuses and number of students) and the age of the university on the importance of accounting system change. The type of university was found to have a significant relationship ($P < 0.05$) with the stage of change in the financial accounting system, management accounting system (budgeting system and performance measurement system) and auditing system with the exception of cost accounting system.

3. There is no statistically significant relationship that can be concluded between the characteristics of the university on the current stage of accounting reform for each specific type of accounting change (financial accounting, budgeting system, cost accounting system, performance measurement system and auditing system).

4. Further analysis of the findings show that there was a statistically significant relationship ($P < 0.05$) between the level of success achieved in the accounting system changes and a number of facilitators and barriers. Significant factors are highlighted in Tables 8.4 and 8.5.

5. The results of the chi-square test showed that the type of university (autonomous and non-autonomous public university) is not associated with the decision of whether or not to adopt ABC. Other characteristics such as the number of campuses, the age of the university and the number of students also did not have an association. In addition, the result of the chi-square test also shows that the type of university (autonomous and non-autonomous public university) has no impact on the implementation stage of ABC. The number of campuses, the age of university and the number of student also has no significant relationship. Moreover, the result of the chi-square test shows that the type of university (autonomous and non-autonomous public university) has no impact on the success of ABC. The result of the chi-square test also shows that the size of university (number of campuses and number of student) and the age of university have no impact on the success of ABC.

6. Further analysis was undertaken to identify any relationships between the level of ABC success and a number of the potential ABC problems. Table 8.9 identified the problems which have a statistically significant relationship ($P < 0.05$). For all significant

relationships a closer look at the mean score showed that those universities that considered the ABC as unsuccessful gave the highest ranking to each ABC problem.

7. The conclusion of the comparative analysis is that there is no significant impact between the characteristics of the universities (as measured by type, age or size) on the accounting change process in the Thai public universities. However, the findings suggest that the level of success achieved in the accounting change depends on the universities having the “right” staff and resources. It is important that the people in the organisation learn and understand about innovation and apply it to their organisation.

Chapter 9

Further Analysis of Findings - II

Exploratory Factor Analysis

9.1 Introduction

The main focus of this research is to analyze factors influencing and effecting accounting change in Thai public universities. This chapter reports on the findings of Exploratory Factor Analysis (EFA) which was used to further examine the factors influencing accounting change.

9.2 Overview of Exploratory Factor Analysis

Not all items within the survey were subject to factor analysis. However, two separate key factor analyses were undertaken on sections of the data. These were:

1. External factors influencing accounting change (measured by ten variables);
2. Internal factors influencing accounting change (measured by fifteen variables)

All the items used in the factor analyses were measured on five point Likert scales. Depending upon the nature of the scale one (1) was lowest or unimportant while five (5) was highest or most important.

Steps in conducting factor analysis

In order to conduct EFA, there are three main steps: 1) Assessment for suitability of data (2) Factor extraction and (3) Factor rotation and interpretation

1. Assessment for suitability of data

There are two data requirements which must be met in order to conduct EFA. The first relates to sample size. Hair et al. (2006) recommends that the sample size should not be fewer than 50 observations. In this study 63 observations were gathered.

Secondly, the correlation matrix for the number of coefficients should be larger than 0.5 (Hair et al. 2006). If only a few correlations are found with a value greater than 0.50, it suggests that factor analysis may not be appropriate for the data. In this study most of the values in the correlation matrix were 0.50, therefore the strength of the relationship between the variables was considered to be appropriate for this research.

2. Factor extraction

The goal of EFA is to summarize the set of variables to make the interpretation easier and to explain as much variation in the original data as possible (Pallant 2005). The researcher must determine the number of factors that they consider best describes the underlying relationship among the variables. Therefore, the researcher can explore and experiment with different numbers of factors until a best decision can be made to achieve a satisfactory solution. There are three techniques that can be used to achieve a satisfactory solution: Kaiser's criterion, a scree plot test and parallel analysis. This study used Kaiser's criterion. The Kaiser-Myer-Okin (KMO) measure of sampling adequacy (Kaiser 1974) is acknowledged as one of the best measures of determining the suitability of a set of data for subsequent factor analysis (Hair et al. 2006; Pallant 2007; Stewart 1981) and was used in this study to examine the data in order to determine whether a factor analysis should be undertaken. Small measures of sampling adequacy (MSA) suggest that a factor analysis should not be undertaken. The suitability of the data set is measured against whether the KMO value is 0.6 or above, and that the Barlett's test of Sphericity value is significant at 0.05 or smaller. The data in this research met both the KMO and significant tests, which suggests its suitability for factor analysis.

3. Factor rotation and interpretation

There are a number of different rotational techniques provided by SPSS (Pallant 2007). Two main approaches to rotation are Orthogonal (uncorrelated), or Oblique (correlated) (Pallant 2005). Orthogonal techniques are Varimax, Quartimax, Equamax and Oblique techniques of Direct Oblimin and Promax. However, the most commonly used Oblique techniques are Direct Oblimin and the most commonly used Orthogonal techniques are Varimax (Pallant 2005). Tabachnick & Fidell (2007) mentioned that Oblique is more

difficult to interpret, describe and report but it does allow for the factors to be correlated. In contrast the Orthogonal approach has been shown to give results that are easier to interpret, however, the technique requires an assumption of no correlation between the factors. Previous researchers which have used both approaches (orthogonal and oblique rotation) have produced similar results (Tabachnick & Fidell 2007). This study used Oblique approach to report the result as it provides information about the degree of correlation between the factors.

9.2.1 Factor Analysis of External Factors Influencing Accounting Change

The first factor analysis was on the ten independent variables which measured the external factors (EF) influencing accounting change. Respondents were asked to rate how important the factors were in influencing accounting change in the university. The answers were given on a Likert scale, ranging from “Very important” (number 5) to “unimportant” (number 1). The ten independent variables used were:

EF1. The 1997 Thai Economic crisis

EF2. Government law

EF3. Public pressure

EF4. Availability of new computer technology to upgrade existing accounting system

EF5. Government requirement for value for money

EF6. Government requirement for a more transparent and accountable public sector

EF7. University funding condition

EF8. The Comptroller General’s Department

EF9. The Office of Higher Education Commission under the ministry of Education (three-dimension accounting initiative)

EF10. Government initiative

The measure of sampling adequacy (MSA) for the ten items was 0.50, suggesting suitability for further analysis (Kaiser 1974, Hair et al. 2006). The KMO value is .688, and Bartlett’s test is significant ($p = 0.000$), therefore factor analysis is appropriate (see table 9.1).

Table 9.1: Result of KMO Value on External Factors

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.688
Bartlett's Test of Sphericity	Approx. Chi-Square	175.545
	Df	45
	Sig.	.000

Table 9.2 details the result of the Direct Oblimin. The correlation matrix shows the strength of the relationship between the four components of external factors influencing accounting change. In this case many of them are above .3 indicating that the construct has strong correlation and suggests that these factors are appropriate for analysis (Pallant 2007).

Table 9.2: Result of Correlation Matrix

Correlation Matrix										
	EF1	EF2	EF3	EF4	EF5	EF6	EF7	EF8	EF9	EF10
Correlation EF1	1.000	.449	.206	.359	.401	.038	.170	.286	.155	.283
EF2	.449	1.000	.414	.232	.332	.137	.184	.175	.061	.187
EF3	.206	.414	1.000	.533	.273	.143	.261	.144	.224	.200
EF4	.359	.232	.533	1.000	.412	.235	.143	.282	.339	.288
EF5	.401	.332	.273	.412	1.000	.454	.465	.370	.204	.249
EF6	.038	.137	.143	.235	.454	1.000	.337	.103	.053	.212
EF7	.170	.184	.261	.143	.465	.337	1.000	.374	.441	.327
EF8	.286	.175	.144	.282	.370	.103	.374	1.000	.521	.281
EF9	.155	.061	.224	.339	.204	.053	.441	.521	1.000	.524
EF10	.283	.187	.200	.288	.249	.212	.327	.281	.524	1.000

Table 9.3 explains the four factors in the Total Variance. According to Kaiser's criterion four factors explained 70.29% of the variation in the data, compared with over 70% explained by the four-factor solution.

Table 9.3: Total Variance Explained for External Factors Influencing Accounting Change

Total Variance Explained

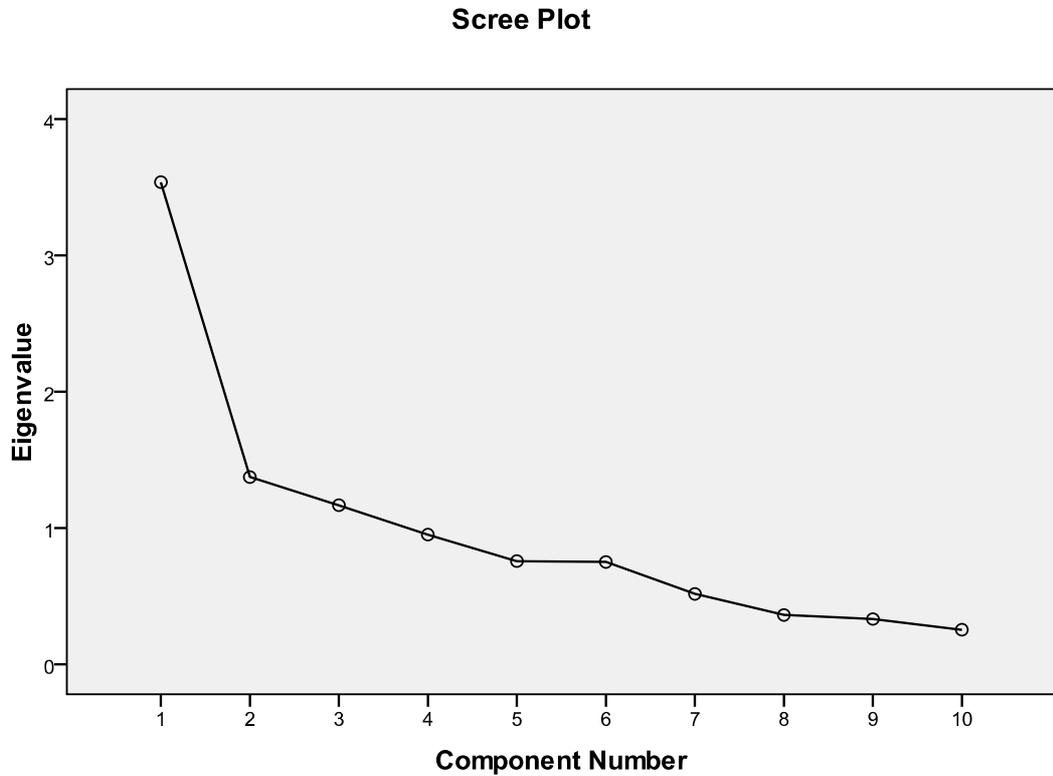
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings ^a
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	3.538	35.382	35.382	3.538	35.382	35.382	2.535
2	1.374	13.736	49.119	1.374	13.736	49.119	2.072
3	1.167	11.671	60.790	1.167	11.671	60.790	2.020
4	.951	9.506	70.296	.951	9.506	70.296	1.990
5	.757	7.568	77.864				
6	.750	7.505	85.368				
7	.516	5.164	90.532				
8	.362	3.620	94.152				
9	.332	3.317	97.469				
10	.253	2.531	100.000				

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

The Scree Plot in Figure 9.1 shows that there were three eigenvalues before the elbow that explained 70% of the variation in the data.

Figure 9.1: Scree Plot for External Factors Influencing Accounting Change



The rotated factor loading yielded clear results, with ten items grouping into four groups (refer Table 9.4). The rotated four-factor solution in Table 9.4 shows the Pattern Matrix table listing the items loadings on the four-factors with ten items loading above .50. Three items loading were on Component 1, two items loading were on component 2, three items loading were on Component 3 and two items loading on component 4.

Table 9.4: Result of Patten Matrix on External Factors Influencing Accounting Change

Pattern Matrix^a

	Component			
	1	2	3	4
EF9	.915			
EF8	.707			
EF10	.636			
EF1		.860		
EF2		.736		
EF6			.914	
EF5			.637	
EF7			.544	
EF3				.870
EF4				.751

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 8 iterations.

Table 9.5 shows the result of a test of the reliability of the factor using Cronbach's Alpha (Cronach 1951). Higher values indicate greater reliability among the indicators (Hair 2002). In this case the reliability coefficient for the factor was 0.79 suggesting that the construct was reliable.

Table 9.5: Result of Cronbach's Alpha

Reliability Statistics

Cronbach's Alpha	N of Items
.790	10

Table 9.6 shows the component and the factor labels for the four groups. The first component was labeled “external users of information”. The second component was labelled “external incident” for change. The third component was labelled “environmental factors” and the last component was labelled “promoters of change”.

Table 9.6: The Summary of Component Variables into Factor Labels

Component	Factor Label
2	1. External incident for change
3	2. Environmental factors
4	3. Promoters of change
1	4. External users of information

In Table 9.7 the component loadings show that the variables were grouped into external incident for change, environmental factors, promoters of change and external users of information. According to the result of data reduction, all ten variables were included as external pressures which influence accounting change and reported all factors appropriate for analysis.

Table 9.7: Result of Factors Analysis of External Factors Influencing Accounting Change

Factor Label	Item	Factor Loading
1. External incident for change	EF1. The 1997 Thai economic crisis	0.860
	EF2. Government law	0.736
2. Environmental factors	EF5. Government requirement for public agencies to be more efficient and to provide services based on value for money	0.637
	EF6. Government requirement for a more transparent and accountable public sector	0.914
	EF7. Requirement to meet revised rules imposed by government in relation to university funding	0.544
3. Promoters of change	EF3. Public pressure for Thailand to have world class universities	0.870
	EF4. Availability of new computer technology to upgrade existing accounting system	0.751
4. External users of information	EF9. To adapt the university’s accounting system in line with the requirements of the Office of Higher Education Commission under the ministry of Education (three-dimension accounting initiative)	0.915
	EF8. To adopt the new accounting system imposed by the Comptroller General’s Department	0.707
	EF10. Requirement by the Thai government for public agencies to report unit cost	0.636

9.2.2 Analysis of Internal Factors Influencing Accounting Change

The second factor analysis was on the fifteen measures of internal factors (IF) influencing accounting change. Respondents were asked to rate how important each internal factor was in influencing accounting change in the university. The answers were given on a Likert scale ranging from 1 to 5 (unimportant to very important). Fifteen independent variables were used in this case. These were:

- IF1. Need for tighter financial management due to less government funding
- IF2. The desire to become an autonomous university
- IF3. To update the accounting system for internal users
- IF4. To update the accounting system for external users
- IF5. Desire to keep up with the latest innovations in the performance measurement
- IF6. Requirement for tighter control of university expenditure
- IF7. Top management of university (president and university committee) wanting upgraded systems
- IF8. The need for cost information for performance measurement initiatives
- IF9. Request from the Deans for cost information
- IF10. Request from Heads of Schools for cost information
- IF11. Request from Heads of Administrative Departments for cost information
- IF12. Lack of decision-relevant cost information from the accounting system
- IF13. To provide improved financial information for university strategic planning
- IF14. To provide improved information for preparing university budgets
- IF15. To provide information for those within the university for operational (day-to-day) decision-making

The measure of sampling adequacy (MSA) for the fifteen items was 0.50, suggesting suitability for further analysis (Hair et al. 2006; Pallant 2007). The KMO value is .740, and Bartlett's test is significant ($P = 0.000$), therefore factor analysis is appropriate (see table 9.8).

Table 9.8: Result of KMO Value on Internal Factors

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.740
Bartlett's Test of Sphericity	Approx. Chi-Square	654.216
	Df	105
	Sig.	.000

Table 9.9: Result of Correlation Matrix

Correlation Matrix

	IF1	IF2	IF3	IF4	IF5	IF6	IF7	IF8	IF9	IF10	IF11	IF12	IF13	IF14	IF15
Correlation IF1	1.000	.465	.218	.142	.333	.265	.287	.336	.132	.102	.030	.237	.408	.380	.399
IF2	.465	1.000	.263	.187	.150	.451	.246	.268	.167	.187	.104	.206	.253	.310	.336
IF3	.218	.263	1.000	.726	.490	.403	.178	.366	-.098	-.039	-.053	.324	.393	.375	.385
IF4	.142	.187	.726	1.000	.453	.439	.096	.397	-.002	-.036	-.014	.404	.437	.381	.392
IF5	.333	.150	.490	.453	1.000	.595	.265	.407	.115	.195	.252	.329	.389	.359	.383
IF6	.265	.451	.403	.439	.595	1.000	.392	.507	.230	.250	.272	.516	.433	.474	.431
IF7	.287	.246	.178	.096	.265	.392	1.000	.569	.554	.459	.370	.438	.288	.254	.361
IF8	.336	.268	.366	.397	.407	.507	.569	1.000	.345	.317	.348	.630	.388	.302	.356
IF9	.132	.167	-.098	-.002	.115	.230	.554	.345	1.000	.861	.744	.367	.177	.116	.158
IF10	.102	.187	-.039	-.036	.195	.250	.459	.317	.861	1.000	.879	.366	.129	.253	.287
IF11	.030	.104	-.053	-.014	.252	.272	.370	.348	.744	.879	1.000	.384	.141	.248	.243
IF12	.237	.206	.324	.404	.329	.516	.438	.630	.367	.366	.384	1.000	.699	.698	.670
IF13	.408	.253	.393	.437	.389	.433	.288	.388	.177	.129	.141	.699	1.000	.796	.738
IF14	.380	.310	.375	.381	.359	.474	.254	.302	.116	.253	.248	.698	.796	1.000	.840
IF15	.399	.336	.385	.392	.383	.431	.361	.356	.158	.287	.243	.670	.738	.840	1.000

Table 9.10: Total Variance Explained for Internal Factors Influencing Accounting Change

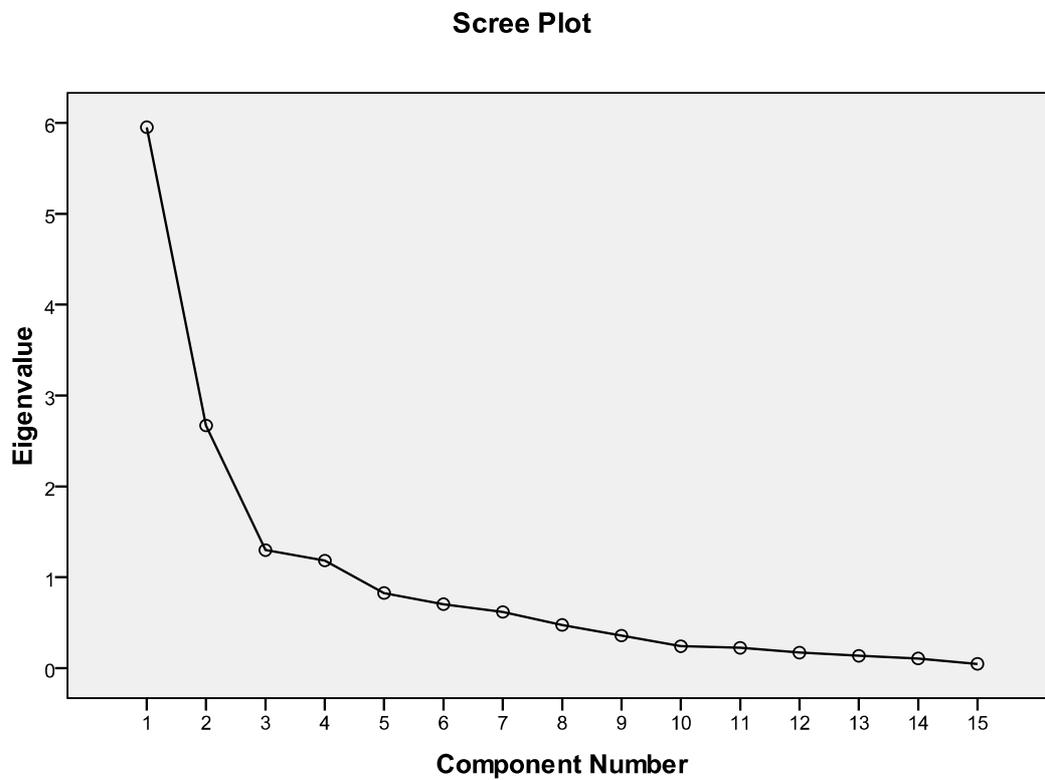
Total Variance Explained							
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings ^a
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	5.953	39.687	39.687	5.953	39.687	39.687	4.559
2	2.670	17.800	57.487	2.670	17.800	57.487	3.727
3	1.299	8.657	66.144	1.299	8.657	66.144	4.032
4	1.183	7.886	74.029	1.183	7.886	74.029	2.592
5	.825	5.503	79.532				
6	.702	4.680	84.212				
7	.617	4.115	88.328				
8	.474	3.161	91.489				
9	.357	2.382	93.871				
10	.241	1.605	95.477				
11	.223	1.488	96.965				
12	.170	1.130	98.095				
13	.135	.900	98.995				
14	.105	.701	99.695				
15	.046	.305	100.000				

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

The Scree Plot in Figure 9.2 shows that there were four eigenvalues before the elbow that explained 74% of the variation in the data.

Figure 9.2: Scree Plot for Internal Factors Influencing Accounting Change



The rotated four-factor solution in Table 9.11 shows the Pattern Matrix table. This shows the items loadings on the four-factor with fifteen items loading above .50 and four items loading on Component 1, four items loading on component 2, five items on Component 3 and only two items loading on component 4.

Table 9.11: Result of Patten Matrix on Internal Factors

Pattern Matrix ^a				
	Component			
	1	2	3	4
IF14	.959			
IF13	.877			
IF15	.877			
IF12	.698			
IF10		.934		
IF9		.925		
IF11		.907		
IF7		.554		
IF4			.841	
IF3			.837	
IF5			.721	
IF6			.581	
IF8			.544	
IF2				.821
IF1				.801

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 8 iterations.

Table 9.12 shows the result of this analysis. A test of the reliability of the factor was undertaken using Cronbach's Alpha (Cronbach 1951). In this case the reliability coefficient for the factor was 0.88 suggesting that the construct was reliable.

Table 9.12: The Result of Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
.880	15

Table 9.13 shows the rotated factor loading yielded clear results, with fifteen items grouping to four groups labeled below. The first component was labelled “producers of change; the second component was labelled “internal users of information”; the third component was labelled “institutional factors”; and the last component was labelled “internal incident for change”.

Table 9.13: The Summary of Component Variables into Factor Labels

Component	Factor Label
4	1. Internal incident for change
3	2. Institutional factors
1	3. Producers of change
2	4. Internal users of information

In Table 9.14 the component loadings show that the variables were grouped into internal incident for change, institutional factors, producers of change and internal users of information. According to the results of the data reduction, all fifteen variables were included as internal pressures which influence accounting change and reported all factors appropriate for analysis.

Table 9.14: Result of Factor Analysis of Internal Factors Influencing Accounting Change

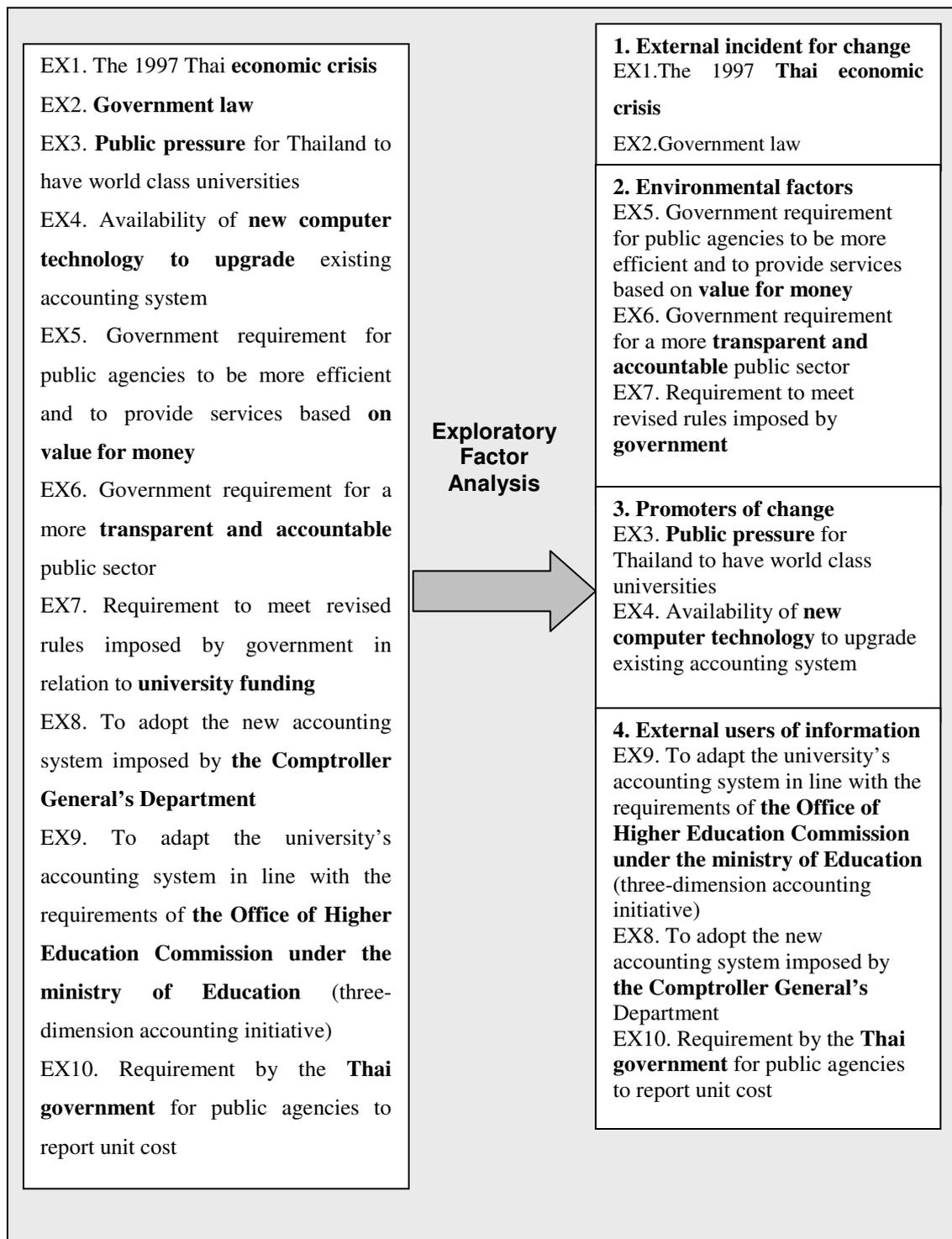
Factor Label	Item	Factor Loading
1. Internal incident for change	IF1. Need for tighter financial management due to less government funding	0.801
	IF2. The desire to become an autonomous university	0.821
2. Institutional factors	IF3. To update the accounting system as it was not able to meet the information needs of internal users	0.837
	IF4. To update the accounting system as it was not able to meet the information needs of external users	0.841
	IF5. Desire to keep up with the latest innovations in the performance measurement	0.721
	IF6. Requirement for tighter control of university expenditure	0.581
	IF8. The need for cost information for performance measurement initiatives	0.544
3. Producers of change	IF12. Lack of decision-relevant cost information from the accounting system	0.698
	IF13. To provide improved financial information for university strategic planning	0.877
	IF14. To provide improved information for preparing university budgets	0.959
	IF15. To provide information for those within the university for operational (day-to-day) decision-making	0.877
4. Internal users of information	IF7. Top management of university (president and university committee) wanting upgraded systems	0.554
	IF9. Request from the Deans for cost information	0.925
	IF10. Request from Heads of Schools for cost information	0.934
	IF11. Request from Heads of Administrative Departments for cost information	0.907

Exploratory factor analysis (EFA) enabled the grouping of a number of variables to a smaller subset. The EFA results show that there were ten external variables and fifteen internal variables that influence accounting change. The scales were reliable with Cronbach alpha of 0.79 for the external variables and 0.88 for the internal variables. The results show the set of external pressures labelled: external incident for change, environmental factors, promoters of change and external users of information. In addition, a set of internal pressures were: internal incident for change, institutional factors, producers of change and internal users of information.

9.2.3 The Group of Key External Drivers Influencing Accounting Change

The four groups of external factors identified as influencing accounting change were: external incident for change, environmental factors, promoters of change and external users of information. Table 9.15 summarize the set of variables.

Table 9.15: Result of Data Reduction for External Pressures Influencing Accounting Change



1. External incident for Change

According to Luder (1992) fiscal stress can be a catalyst for change. In the case of Thailand, the Thai 1997 economic crisis was the main factor that led the Thai government to improve its financial management system and move to more private sector practices. This focus on New public management (NPM) oriented change in the Thai public sector was a precondition for financial assistance from international aid agencies (Bowornwathana 2000; Painter 2006; Sussangkarn & Vichyanond 2007). As a consequence, the Thai government mandated that public agencies adapt their financial management practices in line with New Public Management (NPM) and move from a manual cash based accounting system to a computerised accrual based accounting system. An accrual accounting system is considered essential to improve the overall performance and accountability of the public sector and to enable the public sector to access information to assist in delivering services more effectively and efficiently. The old cash based system simply provided information about cash receipts and payments and did not allow costs to be associated with activities. As reported in Chapter 7 the majority of universities are implementing changes to all accounting systems which reflects the need for improved information.

Further in 2003, the political power base changed with the sweeping election victory of Thaksin Shinawatra's and his Thai Rak Thai Party. Thaksin's government announced an act of law, 2003 Royal Decree No.21, to promote good corporate governance practices. One of the details of the 2003 Royal Decree No. 21 focused on the management accounting practices used in the public sector. The Thai government required government agencies to account for the cost of each category of public service work in compliance with criteria and procedures as specified by the Comptroller General's Department (The Office of the Comptroller General's Department 2006). The costing focus was to enable comparison of costs between similar agencies and to assist in identification of cost reduction opportunities in the future. Another goal of the 2003 Royal Decree is to improve "*budget preparation and analysis*", to make the budgetary process more transparent and also to make "*performance measurement*" more efficient and effective.

One of the key factors that reinvigorated the financial reform occurred when the Thaksin government set deadlines for the completion of the projects. For example, one initiative was for all public agencies to report output costing by 2004. Public agencies were given encouragement by way of incentives to undertake this task. The public sector development commission (PDC) office is responsible for assessing the performance of public agencies to determine that amount of compensation for each Thai public agency. The PDC office determines the performance targets that must be met before the public agency is rewarded for cost reduction achievements in line with Royal Decree No. 21 (The Office of the Comptroller General's Department 2006).

In developing countries, public sector decision-making is highly centralised (Harun 2007). This also is the situation in Thailand. In the Thai culture, the high power distance that exists in the Thai society leads to a level of inequality in power between people in terms of hierarchical values (Hofstede 1984). Thus, when accounting system reform was imposed by the Thai government, it was given a high priority by the public agencies.

2. Environmental Factors

The contingency model of government accounting change explains environmental factors influencing the change. The evidence shows that the new public management (NPM) has been introduced for financial management reform in both developed and developing countries (Harun 2007; Hood 1990; Godfrey, Devlin & Merrouche 2001; Yamamoto 1999). In the case of Thailand, financial accounting, management accounting and auditing system reform was introduced to the public sector after the Thai 1997 economic crisis. In order to improve Thai public financial management, The Royal Decree on Good governance was promulgated by Thai government with four underlying principles: accountability, public participation, information disclosure and performance monitoring and evaluation. NPM is viewed as a component of good governance leading to improved organisational performance in the Thai public sector. The strategic plan for the public sector included: streamlining and rationalization; restructuring and reorganisation; budgetary and financial reform; human resource management and employee compensation reform; changing work culture and values; modernization through e-government; and encouragement of public participation in

Thai public sector (Painter 2006). The need for financial accounting reform was to measure and report financial performance and also to meet funding conditions set by international aid agencies (Nakmahdachalasin 2006). Therefore, financial accounting reform was driven by demand for transparency, accountability and the need for information for comparative purposes.

Moreover, in the environment of the public sector, the Thai government aims to improve performance measurement. Management accounting reform has been introduced to: improve transparency of budget allocation, spending of public money; public service costing; and improved performance measurement (Rukkavatanakul 2006). Under the old cash based system such performance assessment would not have been possible as the recording of only cash transactions would not reflect the costs associated with activities.

Financial reform in Thai public universities was also motivated by reduced funding in the budget allocations. Universities were encouraged to seek funding from sources other than government. This led to the need for improved financial information to strengthen internal financial management to cope with the reduced government funding model.

Therefore, environmental factors were found to force the change process in Thailand. Firstly, the concept of NPM introduced a new management practice for the public sector in developing countries. Secondly, the pressure from the Thai government to improve its accounting information system to meet its objectives of NPM environment in terms of transparency, accountability and value for money. Finally, the pressure on public universities due to reduced government funding requiring the universities to have tighter control of university expenditure.

3. Promoters of Change

According to Godfrey, Devlin & Merrouche (2001) promoters of change such as international funding and donor agencies, influence government accounting change in developing countries. In the case of Thailand, the evidence shows that the Asian Development Bank (ADB) which provided funding to the Ministry of Education requested that all public universities become autonomous in order to improve the

efficiency of administration (Kriratikana 2003). Funding reduction was the main purpose for autonomous status as autonomous universities were required to self finance to substitute its government funding reduction. However, university funding still belongs to the State and the university is also subject to audit and performance evaluation by the State. Therefore, the main purpose of changing university status was financial and management reform in terms of budget reduction.

In 2001, the Thai government received cooperation from the government of Australia (AusAID) to commence the Thai government accounting project. The first stage of the project was to develop the Government Financial Management Information System (GFMIS) including: government accounting policy, chart of government accounting standards, reporting standards and the transforming from a cash basis to accrual basis of accounting (Nakmahdachalasin 2006). In May 2001 the Comptroller General's Department announced the principle of government accounting policy to support government accounting reform (accrual accounting system). This is the first accounting reform in Thai public sector with every public agency being required to follow the new government accounting policy (Nakmahdachalasin 2006).

GFMIS was developed by the Ministry of Finance and all government agencies are required to use the GFMIS since the first of October, in the 2004 year budget. GFMIS was a new information technology system to improve the efficiency of government financial management. The GFMIS supported change from cash to accrual accounting system. The GFMIS also provides the information to support the financial policy decision making and adjustment of national economy direction. Moreover, GFMIS was designed for budget management purposes to control national revenue and expenditure, to cope with government loans and government accounting system.

Therefore, the promoter of change (ADB) and the international accounting consultant influenced government accounting change in Thai public universities. Moreover, the new technology system led to electronic government accounting reform in Thai public sector.

4. External users of Information

According to Christensen (2002), political actors act as stimuli for change. In case of Thailand, the requirement by the government to improve the financial information system after the economic crisis led to the need for government accounting reform. The leaders of government (political actors) acted as people who push the need for accounting change by requiring accounting information to improve the government's accountability and transparency to the public. Therefore, the accounting reform was initiated by the leader of the government who enacted law to enforce the reform (The Royal Decree for Governance). The Comptroller General's Department under Ministry of Finance is responsible for setting the guidelines for the government accounting reform. The Ministry of Education is responsible for the public universities.

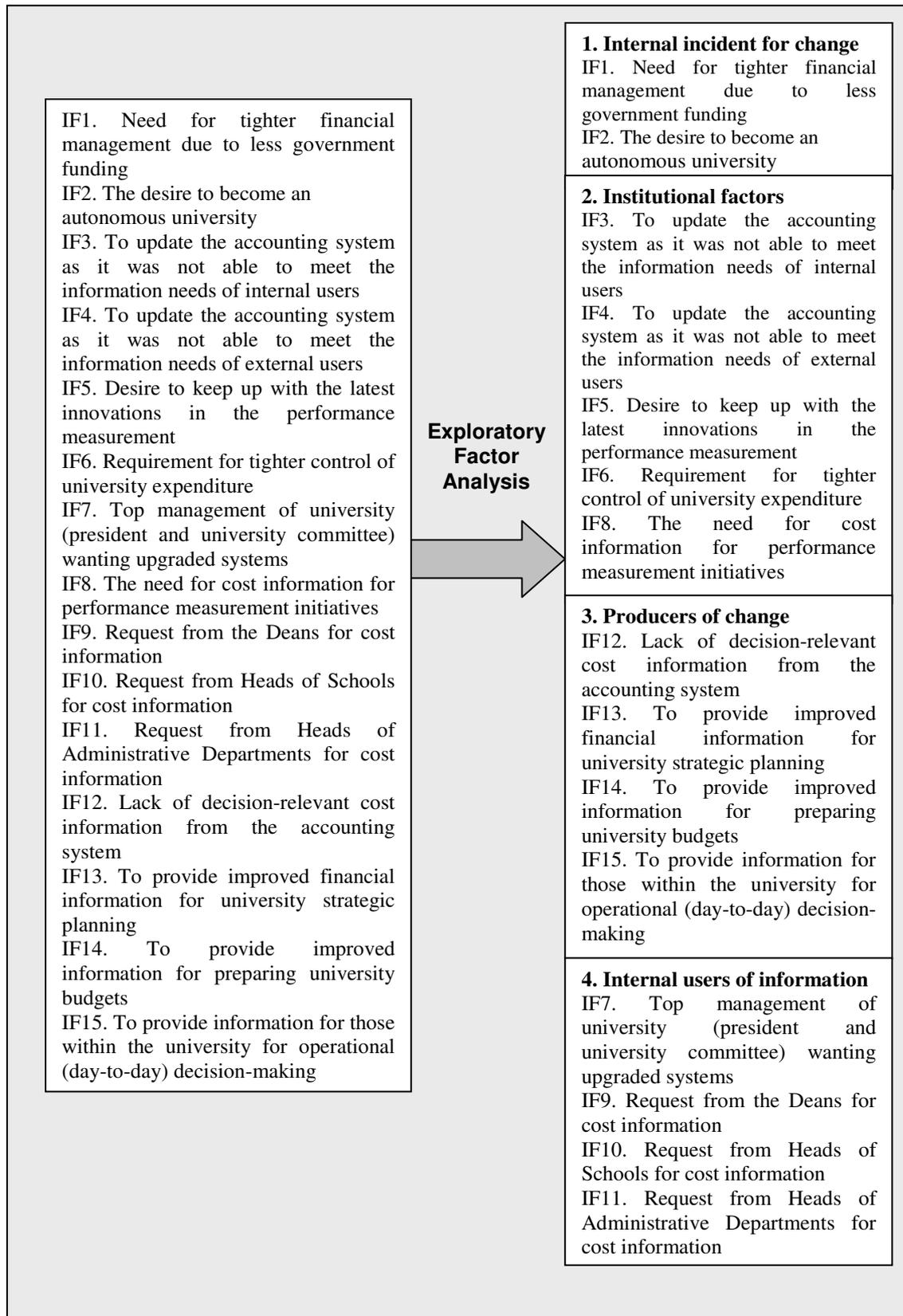
Furthermore, in August 2001, the Comptroller General's Department agreed and announced three dimensions accounting for universities. Three dimensions accounting was developed specifically for the public universities by the Ministry of Education. In the Thai hierarchy, the government does not allow universities to undertake the reform of the accounting system by themselves. It was necessary for the Comptroller General's Department to link the new public university accounting system and the new government accounting system.

Therefore, there had to be great cooperation between the main external users of information (political actors, the Comptroller General's Department and the Ministry of Education) to work together and push the speed of accounting change in Thailand. In contrast to Venieris & Cohen (2004), the accounting reform was initiated by the Ministry of Finance but the Ministry of Finance could not lead change because of problems with the Ministry of Education (university administrators and accounting staff) that was against the reform. Thus, the lack of cooperation between the key external users of information (Ministry of Finance and Ministry of Education) led to slow process of accounting reform in Greek universities. This lack of cooperation was not found in relation to Thailand.

9.2.4 The Group of Key Internal Drivers for Accounting Change

There were fifteen internal factors that influenced accounting change. Table 9.16 provides a summary of the groups of internal factors.

Table 9.16: Result of Data reduction for Internal Pressures Influencing Accounting Change



After conducting the exploratory factor analysis (EFA) the factors were classified into four internal factors. The four internal factors that influenced accounting change were internal incident for change, institutional factor, producer of change and internal user of information.

1. Internal Incident for Change

In addition to the external pressures influencing accounting change, the internal stimuli were also important catalysts in the initial stage of change. The Thai Higher Education Long Range Plan (1990 – 2004) was established during 1986-1987 when Professor Vichit Srisa-an became the Permanent Secretary of MUA (Kritikara 2003). It included four major issues: equity, efficiency, excellence and internationalization. The Long Range Plan stated that future public universities must be established and transformed to have autonomous university status within 10 years (by 2000) (Kritikara 2003). Thus, the idea of the autonomous university was one of the flagships of the Long Range Plan (Kritikara 2003) and supports the change process.

Due to bureaucratic difficulties of Thai public agencies including public universities, the higher education system has problems from inefficient management structure for examples the limitation of funding and lack of financial management flexibility rule of the Civil Services under the public higher education system (Kirtikara 2001). Thus, autonomous status would allow universities self financial management with flexible rules. The autonomous university status would allow university management to take responsibility for three major internal affairs: academic matters, personnel matters and finance and budgets.

2. Institutional Factors

Furthermore, the accounting systems in Thai public universities were viewed as being a problem and not supporting internal management. A report in the series of Research and Development project on Higher Education Management System in Thailand has identified several factors as the root causes of financial problems in Thai public universities (Weesakul 2004). Two of the major factors identified were: a lack of costing information and the lack of a systematic accounting system to record and

thereby control revenue and expenditure (Weesakul 2004). Moreover, the government requirement to report unit cost information could not be satisfied with the cash based accounting system. Therefore, the need to update the universities accounting system was critical as it was not able to meet the information needs of both internal and external users. This acted as a catalyst for change.

3. Producers of Change

The top management of the public universities also required improved financial information for university strategic planning, budgeting and decision-making. The Ministry of Education was the main producers of change to provide the new accounting system needed for Thai public universities. The evidence shows that the Ministry of Education employed a domestic consultant to develop the accounting system specifically for universities (The Office of Ministry of Education 2006).

The transfer knowledge from the consultant to the public agency staff is also important. The Office of Ministry of Education provided training course to public universities for both practitioner level and top management of university (The Office of Ministry of Education 2006). The other evidence from the respondents show that the majority of barriers in term of confusers relate to a lack of knowledge of the process, a difficulty in designing a new financial system, a lack of understanding and knowledge of data requirements, and a lack of understanding of how to collect data. This reflects the lack of knowledge staff had before the accounting change. Moreover, the lack of full-time staff with private accounting knowledge also was a main barrier to change.

However, it was necessary for local academics to assist the government staff to interpret and plan how to implement the consultant's recommendation (The Office of Ministry of Education 2006). A part-time scholar from a well-known university was invited to run the project and support the implementation process. The lack of resources in the government agencies also acted as a barrier to implementation of the reforms. There was a lack of full-time staff with the necessary accounting expertise. This had led the staff not having enough time to thoroughly work on the reform or build an in-depth understanding of the problem and needs of the public agencies. This is not dissimilar to problems identified by Bowornwathana (2000) who suggested that the Thai government

reform has a long way to go because the staff who work on the reform project do not work full-time.

Therefore, it can be concluded that the Ministry of Education was the main producer of change in Thai public universities. The high level of support given to university staff through training courses should enable the adopters to become skilled in the accounting change being implemented. The local consultant and part-time consultant were also important to transfer skill and knowledge (The Office of Ministry of Education 2006). Lapsley & Wright (2004) indicate that training is necessary for the diffusion of knowledge to those involved in the change process. Luder (1992) pointed out that if there is strong enough influence by the producers of change then it is more likely that a successful outcome will be achieved. However, the ability of accounting staff at the university is important. Jackson & Lapsley (2003) mentioned that the adoption of new accounting practices and techniques might not succeed without the potential of adopters learning about innovations that are relevant to their organisation requirements. Therefore, it was necessary for accounting staff to be fully trained to understand what is required and be given the knowledge and skills to fulfil their responsibilities in the change process. For university staff the accounting changes would have been challenging as it would have been a steep learning curve for them to go from the manual cash based accounting system to a computerised accrual based accounting system.

4. Internal users of Information

The support of senior management has been identified as an important factor in achieving success in changing accounting practices (Baird, Harrison & Reeve 2004; Brown, Booth & Giacobbe 2004). In the Thai public sector the need for accounting information has obviously taken a top-down approach with the leader of government initiating and supporting the change process. It would appear that the leaders of the universities have also worked with the government authorities in the change process. The evidence shows that top management of the universities (president and university committee) also wanted upgraded systems to meet their own accounting information needs. Therefore, internal users at the management level were catalysts for accounting change. According to Christensen (2003) key actors (users of information) also act as internal stimuli for accounting change.

9.3 Exploratory Factor Analysis- Barriers to and Facilitators of change

Two separate key factor analyses were undertaken on sections of the data. These were:

1. Barriers to accounting change (measured by twenty-six variables).
2. Facilitators of accounting change (measured by twenty-six variables).

9.3.1 Factor Analysis of Barriers to Accounting Change

Respondents were asked to rate how important a number of factors were in influencing accounting change in the university. All the items used in the factor analyses were measured on a five point Likert scale ranging from “Very important” (number 5) to “unimportant” (number 1). The twenty-six independent variables used were:

- BAR1. Lack of government law to impose accounting change
- BAR2. Lack of commitment by top management of university (president and university committee)
- BAR3. Lack of involvement by the Office of Higher Education Commission under Ministry of education
- BAR4. Lack of support by the Comptroller General’s Department
- BAR5. Lack of involvement by professional accounting bodies
- BAR6. Lack of internal staff to monitor the change process
- BAR7. Lack of external consultant
- BAR8. Accounting staff shortage
- BAR9. Lack of accounting staff involvement
- BAR10. Lack of accounting staff with knowledge of private sector accounting
- BAR11. Not enough full-time staff
- BAR12. Accounting change given lower priority than other initiatives being undertaken by the university
- BAR13. Resistance to accounting change by employees who preferred the existing accounting system
- BAR14. High cost of implementation
- BAR15. Inappropriate software packages
- BAR16. Difficulty in designing a new financial system
- BAR17. Current technology not able to cope with new requirement
- BAR18. Lack of adequate computing resources

- BAR19. Lack of expertise in information systems
- BAR20. High cost for external consultant
- BAR21. Lack of understanding and knowledge of data requirements
- BAR22. Lack of understanding of how to collect data
- BAR23. Culture and mind-set of employees working within university
- BAR24. Lack of autonomy from the government
- BAR25. Lack of a planned training program for employees
- BAR26. Lack of a project plan to guide the implementation

The measure of sampling adequacy (MSA) for the twenty-six items was 0.45, suggesting suitability for further analysis (Kaiser, 1974, Hair et al, 2006). The KMO value is .841, and Bartlett's test is significant ($p = 0.000$), therefore factor analysis is appropriate (see table 9.17).

Table 9.17: Result of KMO Value on External Factors

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.841
Bartlett's Test of Sphericity	Approx. Chi-Square	1199.048
	Df	325
	Sig.	.000

Table 9.18 details the result of Direct Oblimin rotation. The correlation matrix shows the strength of the relationship between the three components of barriers to accounting change. In this case many are above .3 indicating that the construct has strong correlation and suggests that these factors are appropriate for analysis (Pallant, 2007). Table 9.19 shows that according to Kaiser's criterion three factors explained 59.29% of the variation in the data.

Table 9.18: Result of Correlation Matrix

	BAR1	BAR2	BAR3	BAR 4	BAR5	BAR6	BAR7	BAR8	BAR9	BAR10	BAR11	BAR12	BAR13	BAR14	BAR15	BAR16	BAR17	BAR18	BAR19	BAR20	BAR21	BAR22	BAR23	BAR24	BAR24	BAR26
BAR1	1.000	.542	.356	.305	.345	.320	.400	.291	.281	.211	.240	.439	.072	.176	.221	.115	.309	.131	.241	.124	.126	.185	.367	.225	.289	.236
BAR2	.542	1.000	.667	.593	.636	.366	.404	.422	.442	.341	.334	.485	.058	.279	.427	.318	.493	.346	.247	.214	.316	.383	.309	.233	.467	.361
BAR3	.356	.667	1.000	.669	.663	.307	.440	.254	.300	.270	.247	.535	.108	.291	.378	.307	.375	.129	.158	.306	.136	.176	.221	.419	.379	.328
BAR4	.305	.593	.669	1.000	.735	.250	.347	.290	.250	.220	.200	.414	.194	.232	.378	.341	.393	.261	.208	.329	.196	.272	.241	.213	.456	.332
BAR5	.345	.636	.663	.735	1.000	.384	.446	.453	.457	.362	.345	.486	.187	.418	.441	.359	.477	.326	.298	.337	.301	.331	.398	.342	.450	.456
BAR6	.320	.366	.307	.250	.384	1.000	.787	.595	.633	.536	.579	.472	.315	.544	.370	.547	.492	.229	.500	.565	.561	.601	.589	.417	.496	.420
BAR7	.400	.404	.440	.347	.446	.787	1.000	.601	.651	.582	.582	.512	.458	.591	.475	.591	.539	.238	.442	.512	.515	.529	.654	.523	.545	.453
BAR8	.291	.422	.254	.290	.453	.595	.601	1.000	.892	.735	.828	.557	.295	.517	.512	.544	.411	.482	.570	.499	.488	.501	.443	.386	.416	.416
BAR9	.281	.442	.300	.250	.457	.633	.651	.892	1.000	.752	.735	.517	.337	.562	.554	.570	.533	.403	.521	.508	.541	.553	.504	.453	.480	.480
BAR10	.211	.341	.270	.220	.362	.536	.582	.735	.752	1.000	.664	.525	.315	.645	.551	.613	.470	.336	.540	.507	.468	.478	.414	.434	.280	.352
BAR11	.240	.334	.247	.200	.345	.579	.582	.828	.735	.664	1.000	.553	.240	.538	.451	.552	.389	.399	.554	.397	.375	.414	.452	.369	.366	.348
BAR12	.439	.485	.535	.414	.486	.472	.512	.557	.517	.525	.553	1.000	.217	.350	.405	.387	.403	.183	.288	.355	.403	.462	.371	.362	.432	.410
BAR13	.072	.058	.108	.194	.187	.315	.458	.295	.337	.315	.240	.217	1.000	.335	.131	.293	.233	.089	.206	.301	.337	.393	.391	.260	.022	.143
BAR14	.176	.279	.291	.232	.418	.544	.591	.517	.562	.645	.538	.350	.335	1.000	.594	.642	.441	.170	.404	.569	.499	.476	.439	.558	.321	.265
BAR15	.221	.427	.378	.378	.441	.370	.475	.512	.554	.551	.451	.405	.131	.594	1.000	.743	.572	.220	.487	.453	.589	.526	.346	.353	.461	.411
BAR16	.115	.318	.307	.341	.359	.547	.591	.544	.570	.613	.552	.387	.293	.642	.743	1.000	.593	.275	.512	.536	.579	.575	.486	.428	.536	.503
BAR17	.309	.493	.375	.393	.477	.492	.539	.411	.533	.470	.389	.403	.233	.441	.572	.593	1.000	.359	.476	.423	.535	.536	.546	.201	.460	.418
BAR18	.131	.346	.129	.261	.326	.229	.238	.482	.403	.336	.399	.183	.089	.170	.220	.275	.359	1.000	.405	.202	.277	.310	.269	.182	.369	.373
BAR19	.241	.247	.158	.208	.298	.500	.442	.570	.521	.540	.554	.288	.026	.404	.487	.512	.476	.405	1.000	.501	.445	.419	.485	.257	.362	.209
BAR20	.124	.214	.306	.329	.337	.565	.512	.499	.508	.507	.397	.355	.301	.569	.453	.536	.423	.202	.501	1.000	.606	.587	.401	.416	.425	.388
BAR21	.126	.316	.136	.196	.301	.561	.515	.488	.541	.468	.375	.403	.337	.499	.589	.579	.535	.277	.445	.606	1.000	.923	.463	.251	.436	.485
BAR22	.185	.383	.176	.272	.331	.601	.529	.501	.553	.478	.414	.462	.393	.476	.526	.575	.536	.310	.419	.587	.923	1.000	.552	.268	.473	.483
BAR23	.368	.309	.221	.241	.398	.589	.654	.443	.504	.414	.452	.371	.391	.439	.346	.486	.546	.269	.485	.401	.463	.552	1.000	.387	.462	.340
BAR24	.225	.233	.419	.213	.342	.417	.523	.386	.453	.434	.369	.362	.260	.558	.353	.428	.201	.182	.257	.416	.251	.268	.387	1.000	.344	.296
BAR25	.289	.467	.379	.456	.450	.496	.545	.416	.480	.280	.366	.432	.022	.321	.461	.536	.460	.369	.362	.425	.436	.473	.462	.344	1.000	.725
BAR26	.236	.361	.328	.332	.456	.420	.453	.416	.480	.352	.348	.410	.143	.265	.411	.503	.418	.373	.209	.388	.485	.483	.340	.296	.725	1.000

Table 9.19: Total Variance Explained for Barriers to Change

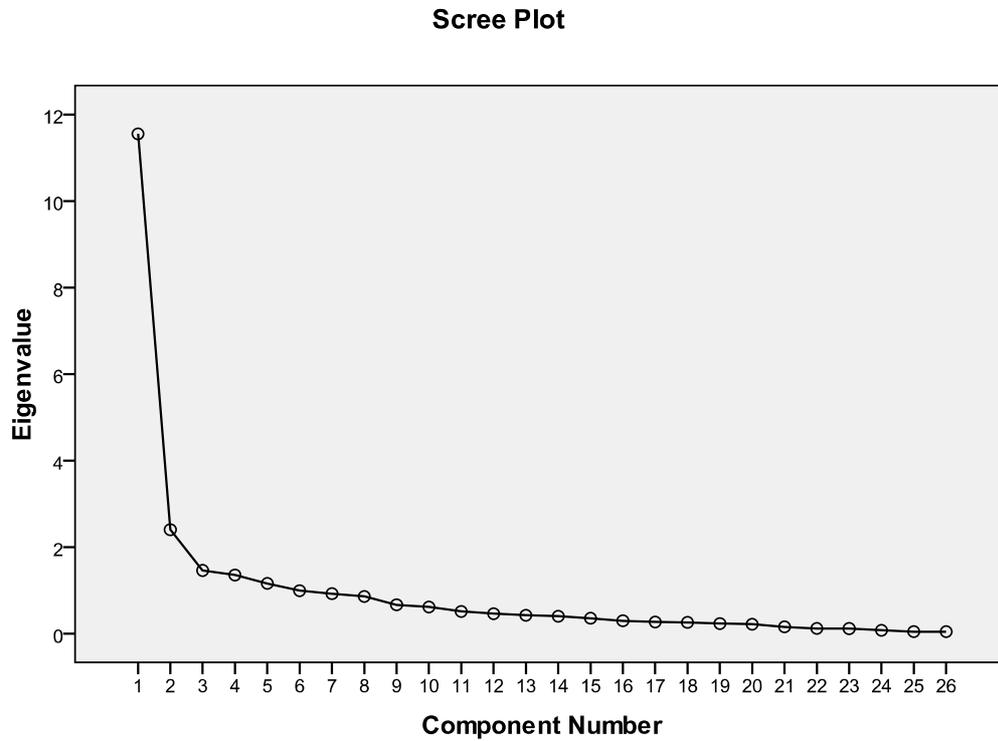
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings ^a
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	11.551	44.427	44.427	11.551	44.427	44.427	9.551
2	2.404	9.247	53.674	2.404	9.247	53.674	5.956
3	1.461	5.618	59.292	1.461	5.618	59.292	7.778
4	1.357	5.219	64.511				
5	1.161	4.464	68.974				
6	.995	3.828	72.802				
7	.923	3.551	76.354				
8	.861	3.310	79.664				
9	.667	2.565	82.229				
10	.617	2.372	84.602				
11	.513	1.972	86.573				
12	.462	1.775	88.349				
13	.426	1.639	89.987				
14	.403	1.548	91.536				
15	.355	1.364	92.899				
16	.298	1.145	94.044				
17	.270	1.040	95.084				
18	.258	.994	96.078				
19	.235	.906	96.984				
20	.218	.839	97.823				
21	.157	.603	98.425				
22	.120	.463	98.888				
23	.118	.454	99.342				
24	.078	.299	99.640				
25	.047	.182	99.822				
26	.046	.178	100.000				

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

The Scree Plot in Figure 9.3 shows that there were three eigenvalues before the elbow that explained 59% of the variation in the data.

Figure 9.3: Scree Plot for Barriers to Accounting Change



The rotated three-factor solution in Table 9.20 shows the Pattern Matrix table. This shows the items loadings on the three-factor with twenty items loading above .50 and ten items loading on Component 1, six items loading on component 2, eight items on Component 3.

Table 9.20: Result of Patten Matrix on Barriers to Accounting Change

Pattern Matrix^a

	Component		
	1	2	3
BAC11	.900		
BAC8	.856		
BAC10	.854		
BAC9	.788		
BAC14	.667		
BAC7	.614		
BAC24	.586		
BAC6	.583		
BAC19	.570		
BAC3		.856	
BAC4		.793	
BAC2		.786	
BAC5		.741	
BAC1		.580	
BAC21			-.845
BAC22			-.798
BAC26			-.628
BAC25			-.610
BAC17			-.541
BAC16			-.534

Extraction Method: Principal Component

Analysis.

Rotation Method: Oblimin with Kaiser

Normalization.

a. Rotation converged in 12 iterations.

Table 9.21 shows the result of this analysis. A test of the reliability of the factor was undertaken using Cronbach's Alpha (Cronbach 1951). In this case the reliability coefficient for the factor was 0.947 suggesting that the construct was reliable.

Table 9.21: The Result of Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
.947	26

In Table 9.22 the component loadings show that the variables were grouped into confusers, delayers and frustrators. According to the result of data reduction, twenty-four variables were included as barriers to accounting change and reported all factors appropriate to analysis.

Table 9.22: Result of Factors Analysis of Barriers to Accounting Change

Factor Label	Item	Factor Loading
1. Confusers	21.Lack of understanding and knowledge of data requirements	0.845
	22.Lack of understanding of how to collect data	0.798
	26.Lack of a project plan to guide the implementation	0.628
	25.Lack of a planned training program for employees	0.610
	17.Current technology not able to cope with new requirement	0.541
	16.Difficulty in designing a new financial system	0.534
2. Delayers	11.Not enough full-time staff	0.900
	8.Accounting staff shortage	0.856
	10.Lack of accounting staff with knowledge of private sector accounting	0.854
	9.Lack of accounting staff involvement	0.788
	14.High cost of implementation	0.667
	7.Lack of external consultant	0.614
	24.Lack of autonomy from the government	0.586
	6.Lack of internal staff to monitor the change process	0.583
	19.Lack of expertise in information systems	0.570

Table 9.22 Result of Factor Analysis of Barriers to Accounting Change (Continues)

Factor Label	Item	Factor Loading
3. Frustrators	3.Lack of involvement by the Office of Higher Education Commission under Ministry of education	0.856
	4.Lack of support by the comptroller General’s Department	0.793
	2.Lack of commitment by top management of university (president and university committee)	0.786
	5.Lack of involvement by professional accounting bodies	0.741
	1.Lack of government law to impose accounting change	0.580

9.3.2 Factor Analysis of Facilitators of Accounting Change

Respondents were asked to rate how important a number of factors were in facilitating accounting change in the university. All the items used in the factor analyses were measured on a five point Likert scale ranging from “Very important” (number 5) to “unimportant” (number 1). The twenty-six independent variables used were:

FAC1. Strong force of government law

FAC2. Commitment by top management of university (president and university committee)

FAC3. High level of involvement b the Office of Higher Education Commission under Ministry of education

FAC4. Strong support by the comptroller General’s Department

FAC5. Support from the accounting professional bodies

FAC6. Adequate number of internal staff to monitor the change process

FAC7. Employment of external consultant

FAC8. Adequate number of full-time accounting staff

FAC9. Accounting staff involvement and commitment

FAC10. Adequate number of accountants with knowledge of private sector accounting

FAC11. Adequate number of full-time staff

FAC12. High priority given to accounting change

FAC13. No resistance to accounting change by employees

FAC14. University resource committed to change process

FAC15. Appropriate software packages

FAC16. Adequate resource for designing a new financial system

- FAC17. Technology able to cope with new requirement
- FAC18. Adequate computing resources
- FAC19. Adequate level of staff with knowledge of information system
- FAC20. Resources available in budget for consultant
- FAC21. Understanding and knowledge of data requirements
- FAC22. Understanding of how to collect data
- FAC23. Necessary culture and mind-set within university to support change
- FAC24. Autonomy from the government
- FAC25. Well planned training program for staff
- FAC26. Well documented project plan to guide the implementation

The measure of sampling adequacy (MSA) for the twenty-six items was 0.45, suggesting suitability for further analysis (Kaiser 1974, Hair et al. 2006). The KMO value is .776, and Bartlett's test is significant (P=0.000), therefore factor analysis is appropriate (see table 9.23).

Table 9.23: Result of KMO Value on Facilitators of Accounting Change

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.776
Bartlett's Test of Sphericity	Approx. Chi-Square	1206.396
	Df	325
	Sig.	.000

Table 9.24 details the result of Direct Oblimin rotation. The correlation matrix shows the strength of the relationship between the three components of facilitators to accounting change. In this case many of them above .3 indicate that the construct has strong correlation and suggests these factors appropriate to analysis (Pallant 2007).

Table 9.24: Result of correlation matrix

	FAC1	FAC2	FAC3	FAC4	FAC5	FAC6	FAC7	FAC8	FAC9	FAC10	FAC11	FAC12	FAC13	FAC14	FAC15	FAC16	FAC17	FAC18	FAC19	FAC20	FAC21	FAC22	FAC23	FAC24	FAC25	FAC26
FAC1	1.000	.371	.183	.313	.282	.203	.023	.128	.083	.142	.129	.167	.172	.024	.049	.128	.146	.112	.177	.199	.070	.121	.067	.047	.200	.191
FAC2	.371	1.000	.326	.216	.211	.616	.460	.267	.440	.141	.302	.180	.152	.394	.303	.203	.427	.492	.403	.501	.522	.524	.424	.393	.384	.228
FAC3	.183	.326	1.000	.612	.535	.184	.345	.195	.219	.004	.134	.205	.037	.245	.213	.155	.250	.050	.245	.205	.224	.271	.331	.363	.244	.150
FAC4	.313	.216	.612	1.000	.698	.221	.346	.403	.254	.249	.125	.250	.029	.103	.182	.116	.177	.020	.196	.119	.139	.204	.234	.088	.264	.125
FAC5	.282	.211	.535	.698	1.000	.297	.332	.374	.296	.297	.351	.186	.000	.166	.265	.249	.285	.219	.272	.215	.251	.283	.243	.137	.341	.257
FAC6	.203	.616	.184	.221	.297	1.000	.738	.337	.547	.234	.387	.096	.127	.320	.301	.314	.345	.446	.341	.511	.542	.574	.274	.339	.538	.367
FAC7	.023	.460	.345	.346	.332	.738	1.000	.454	.555	.291	.378	.181	.093	.318	.273	.247	.265	.351	.268	.483	.526	.497	.285	.438	.419	.216
FAC8	.128	.267	.195	.403	.374	.337	.454	1.000	.669	.419	.751	.257	.167	.295	.387	.409	.432	.511	.317	.308	.501	.496	.424	.393	.359	.274
FAC9	.083	.440	.219	.254	.296	.547	.555	.669	1.000	.452	.692	.258	.365	.386	.383	.360	.510	.544	.369	.495	.689	.716	.519	.548	.396	.319
FAC10	.142	.141	.004	.249	.297	.234	.291	.419	.452	1.000	.475	.302	.161	.129	.316	.358	.400	.258	.182	.193	.398	.405	.254	.284	.208	.234
FAC11	.129	.302	.134	.125	.351	.387	.378	.751	.692	.474	1.000	.270	.262	.330	.553	.478	.620	.589	.492	.389	.687	.689	.457	.456	.391	.415
FAC12	.167	.180	.205	.250	.186	.096	.181	.257	.258	.302	.270	1.000	.412	.276	.153	.171	.267	.071	.177	.193	.297	.312	.390	.285	.156	.075
FAC13	.172	.152	.307	.029	.000	.127	.093	.167	.365	.161	.262	.412	1.000	.333	.358	.243	.339	.105	.139	.180	.249	.263	.448	.436	.163	.321
FAC14	.024	.394	.245	.103	.166	.320	.318	.295	.386	.129	.330	.276	.333	1.000	.725	.542	.620	.484	.498	.422	.477	.421	.394	.476	.521	.408
FAC15	.049	.303	.213	.182	.265	.301	.273	.387	.383	.316	.553	.163	.358	.725	1.000	.737	.782	.457	.640	.367	.506	.458	.435	.520	.467	.624
FAC16	.128	.203	.115	.116	.249	.314	.247	.409	.360	.358	.478	.171	.243	.542	.737	1.000	.666	.409	.494	.369	.473	.408	.326	.375	.327	.507
FAC17	.143	.427	.250	.177	.285	.345	.265	.432	.510	.400	.620	.267	.339	.620	.782	.666	1.000	.550	.702	.477	.629	.585	.510	.419	.365	.483
FAC18	.112	.495	.050	.020	.219	.446	.351	.511	.544	.258	.589	.071	.105	.484	.457	.409	.550	1.000	.588	.577	.579	.552	.285	.278	.416	.233
FAC19	.177	.403	.245	.196	.272	.341	.268	.317	.369	.182	.492	.177	.139	.498	.640	.494	.702	.588	1.000	.496	.519	.489	.354	.324	.435	.437
FAC20	.199	.501	.205	.199	.215	.511	.483	.308	.495	.193	.389	.193	.180	.422	.367	.369	.477	.577	.496	1.000	.746	.683	.539	.460	.517	.415
FAC21	.070	.522	.224	.139	.251	.542	.526	.501	.689	.398	.687	.398	.687	.297	.249	.477	.506	.473	.629	.579	1.000	.925	.565	.544	.578	.511
FAC22	.121	.524	.271	.204	.283	.584	.497	.496	.716	.405	.689	.312	.263	.421	.458	.408	.585	.552	.489	.683	.925	1.000	.601	.576	.617	.551
FAC23	.068	.424	.331	.234	.243	.274	.285	.424	.419	.254	.457	.390	.448	.394	.435	.326	.510	.285	.354	.539	.565	.601	1.000	.699	.426	.399
FAC24	.047	.383	.363	.088	.137	.339	.438	.393	.548	.284	.456	.285	.436	.476	.520	.375	.419	.278	.324	.460	.544	.576	.699	1.000	.552	.527
FAC25	.200	.384	.244	.264	.341	.538	.419	.359	.396	.208	.391	.156	.163	.521	.467	.327	.365	.416	.435	.517	.578	.617	.426	.552	1.000	.709
FAC26	.191	.228	.150	.125	.257	.367	.216	.274	.319	.234	.415	.075	.321	.408	.624	.507	.483	.233	.437	.415	.511	.551	.399	.527	.709	1.000

Table 9.25 explained three factors in the Total Variance. According to Kaiser's criterion three factors explained 55.59% of the variation in the data, compared with over 60% explained by the four-factor solution.

Table 9.25: Result of Total Variance Explained for Facilitators of Accounting Change

Total Variance Explained

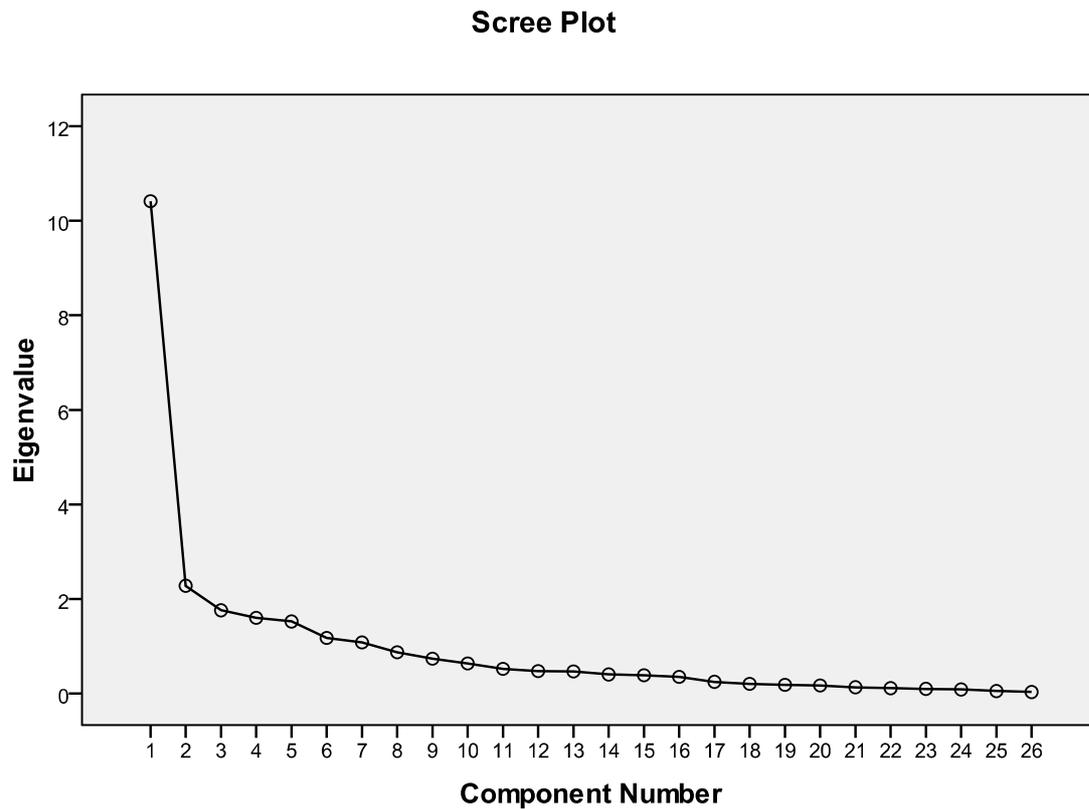
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings ^a
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
	1	10.416	40.061	40.061	10.416	40.061	40.061
2	2.280	8.767	48.828	2.280	8.767	48.828	4.026
3	1.760	6.770	55.598	1.760	6.770	55.598	8.390
4	1.600	6.156	61.754				
5	1.524	5.861	67.615				
6	1.174	4.515	72.130				
7	1.080	4.155	76.285				
8	.873	3.359	79.644				
9	.736	2.831	82.475				
10	.637	2.450	84.925				
11	.522	2.007	86.931				
12	.475	1.827	88.758				
13	.468	1.801	90.559				
14	.403	1.551	92.110				
15	.386	1.486	93.596				
16	.350	1.348	94.944				
17	.246	.946	95.890				
18	.204	.784	96.674				
19	.183	.703	97.377				
20	.171	.659	98.035				
21	.132	.507	98.542				
22	.113	.434	98.976				
23	.098	.377	99.353				
24	.086	.331	99.684				
25	.051	.197	99.880				
26	.031	.120	100.000				

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

The Scree Plot in Figure 9.4 shows that there were three eigenvalues before the elbow that explained 55% of the variation in the data.

Figure 9.4: Scree Plot for Facilitators of Accounting Change



The rotated twenty-six factor solution in Table 9.26 shows the Pattern Matrix table. This shows the items loadings on the three-factor with eighteen items loading above .50 and nine items loading on Component 1, four items loading on component 2, ten items on Component 3.

Table 9.26: Result of Pattern Matrix on Facilitators of Change

Pattern Matrix^a

	Component		
	1	2	3
FAC15	.890		
FAC17	.759		
FAC16	.755		
FAC14	.673		
FAC13	.646		
FAC26	.614		
FAC19	.524		
FAC4		.941	
FAC5		.794	
FAC3		.746	
FAC6			-.877
FAC7			-.788
FAC21			-.734
FAC22			-.730
FAC20			-.728
FAC2			-.696
FAC18			-.686
FAC9			-.665

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 11 iterations.

Table 9.27 shows the result of this analysis. A test of the reliability of the factor was undertaken using Cronbach's Alpha (Cronach 1951). In this case the reliability coefficient for the factor was 0.933 suggesting that the construct was reliable.

Table 9.27: The Result of Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
.933	26

In Table 9.28 the component loadings show that the variables were grouped into promoters of change, producers of change and communicators of change see below. According to the result of data reduction, twenty-three variables were included as facilitators to accounting change and reported all factors appropriate for analysis. Table 9.28 shows the result of factors analysis of facilitators of accounting change.

Table 9.28: Result of Factors Analysis of Facilitators of Accounting Change

Factor Label	Item	Factor Loading
1. Promoters of change	4. Strong support by the Comptroller General's Department	.941
	5. Support from the accounting professional bodies	.794
	3.High level of involvement by the Office of Higher Education Commission under Ministry of Education	.746
2. Producers of change	6. Adequate number of internal staff to support the change process	.877
	7. Employment of external consultant	.788
	21. Understanding and knowledge of data requirement	.734
	22.Understanding of how to collect data	.730
	20.Resources available in budget for consultant	.728
	2. Commitment by top management of university (president and university committee)	.696
	18.Adequate computing resources	.686
	9.Accounting staff involvement and commitment	.665

Table 9.28: Result of Factors Analysis of Facilitators of Accounting Change

Factor Label	Item	Factor Loading
3. Communicators of change	15.Appropriate software packages	.890
	17.Technology able to cope with new requirement	.759
	16.Adequate resources for designing new system	.755
	14.University resources committed to change process	.673
	13.No resistance to accounting change by employees	.646
	26.Well documented project plan to guide the implementation	.614
	19. Adequate level of staff with knowledge of information systems	.524

Exploratory factor analysis (EFA) enabled the grouping a number of variables to a smaller subset. The EFA results showed that there were twenty variables relating to barriers and eighteen variables relating to facilitators that influence accounting change. The scales were reliable with Cronbach alpha of 0.947 for the barriers and 0.933 for the facilitators. The results show the set of barriers were: confusers, delayers and frustrators. In addition, the set of facilitators were: promoters of change, producers of change and communicators of change.

9.3.3 The Group Factor Analysis of Barriers to Accounting Change

Table 9.29: Result of Data Reduction for Barriers to Accounting

<p>1.Lack of government law to impose accounting change 2.Lack of commitment by top management of university (president and university committee) 3.Lack of involvement by the Office of Higher Education Commission under Ministry of education 4.Lack of support by the comptroller General’s Department 5.Lack of involvement by professional accounting bodies 6.Lack of internal staff to monitor the change process 7.Lack of external consultant 8.Accounting staff shortage 9.Lack of accounting staff involvement 10.Lack of accounting staff with knowledge of private sector accounting 11.Not enough full-time staff 12.Accounting change given lower priority than other initiatives being undertaken by the university 13.Resistance to accounting change by employees who preferred the existing accounting system 14.High cost of implementation 15.Inappropriate software packages 16.Difficulty in designing a new financial system 17.Current technology not able to cope with new requirement 19.Lack of expertise in information systems 20.High cost for external consultant 21.Lack of understanding and knowledge of data requirements 22.Lack of understanding of how to collect data 24.Lack of autonomy from the government 25.Lack of a planned training program for employees 26.Lack of a project plan to guide the implementation</p>	<p>Exploratory Factor Analysis</p> 	<p>1. Confusers 21.Lack of understanding and knowledge of data requirements 22.Lack of understanding of how to collect data 26.Lack of a project plan to guide the implementation 25.Lack of a planned training program for employees 17.Current technology not able to cope with new requirement 16.Difficulty in designing a new financial system 20.High cost for external consultant 15.Inappropriate software packages</p> <p>2. Delayers 11.Not enough full-time staff 8.Accounting staff shortage 10.Lack of accounting staff with knowledge of private sector accounting 9.Lack of accounting staff involvement 14.High cost of implementation 7.Lack of external consultant 24.Lack of autonomy from the government 6.Lack of internal staff to monitor the change process 19.Lack of expertise in information systems 13.Resistance to accounting change by employees who preferred the existing accounting system</p> <p>3. Frustrators 3.Lack of involvement by the Office of Higher Education Commission under Ministry of education 4.Lack of support by the comptroller General’s Department 2.Lack of commitment by top management of university (president and university committee) 5.Lack of involvement by professional accounting bodies 1.Lack of government law to impose accounting change 12.Accounting change given lower priority than other initiatives being undertaken by the university</p>
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After conducting the exploratory factor analysis (EFA) the factors were classified into three barriers to change. The three barriers to change that influenced accounting change were explained in term of confusers, delayers and frustrators of change.

The findings of the EFA are shown in Table 9.29 above, and the barriers have been broken down in terms of confusers, frustrators and delayers in line with classification of contingent variables identified by Kasurinen (2000). Confusers refer to complexity of project environment and uncertainty about the project's future role in the organisation. Delayers refer to the lack of clear-cut strategies to guide the change process and the presence of an inadequate information system to support the change. Frustrators refer to the existing reporting systems and organisational culture.

1. Confusers

According to previous studies accounting reform in the public sector is not without its problems. Yamamoto (1999) mentioned that the value of accounting reform depends on the level of the user's understanding and the new systems' contribution to improved decision making. In developing countries, Marwata & Alam (2006) note that lack of accounting personnel to guide accounting change led to implementation barriers in Indonesian local government. Harun (2007) also found that other barriers to change related to government accounting staffs' lack of direct experience in accrual accounting which led to an unsuccessful implementation. This suggests that if government accounting staff do not have a sound understanding of accrual accounting the process itself may become too complex which will lead to accounting staff becoming confused about the change process. Additionally, Kasurinen (2002) reveals that the complexity of accounting techniques (such as the balanced scorecard) can act as confusers to change. The result of the factor analysis helps to explain the barriers to change in term of "confusers" which relate to: lack of understanding and knowledge of data requirements; lack of understanding of how to collect data; lack of a project plan to guide the implementation; and lack of a planned training program for employees. The evidence from the respondents supports the findings and give further insight. *"I have lacked of understanding in new government accounting"* and *"I want the government to have well prepared training of government accounting reform for university"* This highlights

the importance of these confusers as barriers in the government accounting change process.

Furthermore, Government Fiscal Management Information System (GFMIS) was a new system developed to support the change from cash to accrual accounting system in Thai public sector. The evidence shows that this new technology system had an impact on the government accounting reform. The majority of respondents (80.9%) considered that the GFMIS not being completed caused problems in the development of the unit cost reports in line with Royal Decree section 21. This suggests that before the unit cost requirement could be met, the GFMIS needs to be fully operational. Other evidence relating to the “confusers” were: current university technology not being able to cope with the new requirements; difficulty in designing a new financial system; high cost for external consultant; and inappropriate software packages. This is supported by comments from respondents” *“the government should provide appropriate technology and accounting software package for university”* and *“too costly for develop appropriate software and high cost for consultant”* Thus, difficulty in designing a new financial system, lack of technology to cope with new requirement, lack of inappropriate software packages and lack of external consultant can all be considered confusers which can delay the change process.

2. Delayers

Additionally, Mimba, Helden & Tillema (2007) noted that lack of facilities, lack of necessary staff and insufficient funding were barriers to reform in developing countries and can delay the change. Venieris & Cohen (2004) highlight that lack of accounting staff slowed the process of government accounting reform in Greek universities. The findings of the factor analysis also support this. The highest factor loading test suggests that the delayers to change in Thai public universities were not enough full-time staff, accounting staff shortage, lack of accounting staff with knowledge of private sector accounting, and lack of accounting staff involvement. As noted by one respondent *“Not enough full time accounting staff will effect the success of implementation process”* .

Other highly ranked factors include lack of external consultant, lack of internal staff to monitor the change process, and lack of expertise in information systems. These factors

relate to a lack of a clear-cut strategy to guide and monitor the change process (Kasurinen 2002) and led to inadequate information systems to support the change process.

Moreover, the high cost of implementation (Mimba, Helden & Tillema 2007), lack of autonomy from parent company (which would equate to the government in the case of the public sector) (Cobb, Helliard & Innes 1995) and resistance to accounting change (Cobb, Helliard & Innes 1995) may lead to slow progress of change in developing countries. The factor analysis and findings of this study also support these previous studies.

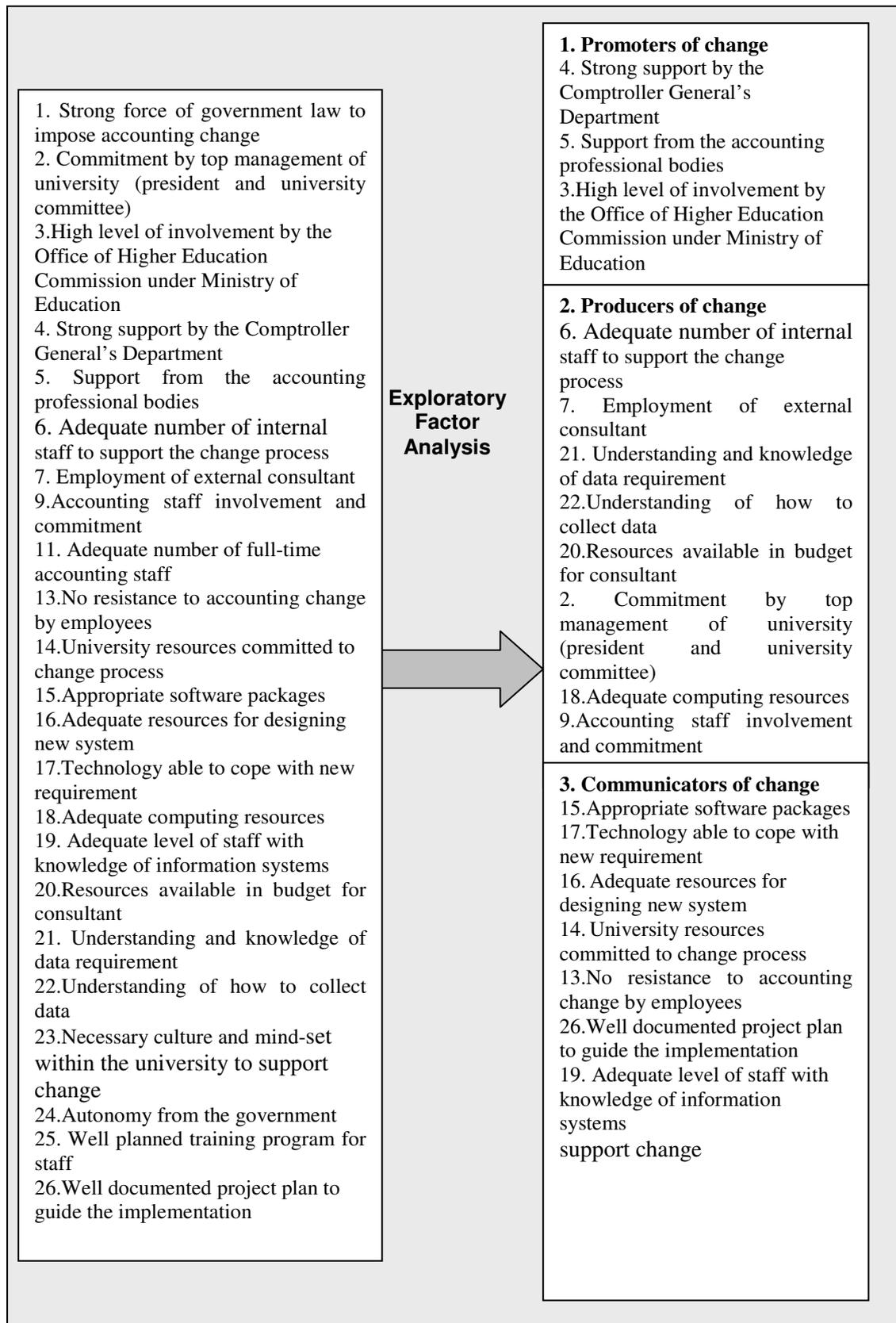
3. Frustrators

The factor analysis and finding also show the respondents consider the change process can be influenced by the lack of cooperation and support from senior people/authorities. For example, Cobb, Helliard & Innes (1995) highlighted the importance of senior management, and Christensen (2003) the role of authorities in supporting change. In contrast, Venieris & Cohen (2004) in their study of Greek universities found that the lack of cooperation between the Ministry of Finance (in favour of changes) and the Ministry of Education (against the changes) led to slow process of change in Greek universities. These findings of this study suggest that if there is a lack of involvement by those authorities that oversee or support public universities then the authorities will negatively impact the change process and thereby act as “frustrators”.

9.3.4 The Group of Facilitators of Accounting Change

After conducting the exploratory factor analysis (EFA) the factors were classified into three facilitators of change. The three facilitators of changes that influence accounting change were explained in terms of promoters of change, producers of change and communicators of change.

Table 9.30: Result of Data Reduction for Facilitators of Accounting Change



1. Promoters of change

Luder (1992) and Christensen (2003) emphasise the role of promoters of change as drivers of change. Drivers of change also can act as either barriers or facilitators (Schwarze, Wullenweberb & Hackethalc 2007). After conducting the factor analysis, the result show the factors that respondents consider support the change related to the strong support by the Comptroller General's Department, high level of involvement by the Office of Higher Education Commission under Ministry of Education, support from the accounting professional bodies and support from government law to impose accounting change. The Ministry of Education gave strong support to the accounting changes in Thai public universities by employing domestic consultants to work with government staff to design the accounting system specifically for public universities.

2. Producers of change

Furthermore, Innes & Mitchell (1990) highlight the role of accounting staff as facilitators of change. The result of factor analysis in this study also suggests that adequate full-time accounting staff, adequate internal staff and accounting staff involvement and commitment in the change process acted as facilitators to support the change. Yamamoto (1999) emphasized the level of people's understanding about accounting reform and its contribution to improved decision making as facilitators of change. The findings of the factor analysis also suggest that if accounting staff understand and have knowledge of data requirements and understanding of how to collect data then achievement of the change process will be occur.

According to Cobb, Helliard & Innes (1995) the role of the leader of organisation provides momentum for change process. The high factor loading also indicates that if there is strong commitment by top management of the university (president and university committee) who are willing to provide support by giving the required resources (such as employ enough full-time staff, external consultant and support funding and budget provide well planned training program for staff) will be facilitators of change and assist the success of accounting change in Thai public universities.

3. Communicators of change

According to Lapsley & Wright (2003) communicators of change also act as facilitator of change. The result of the factor analysis suggests facilitators in term of communicators of change were having appropriate software, having technology able to cope with new requirement, adequate resources for designing new system and adequate level of staff with knowledge of information systems. As noted by one respondent “*My university wants to have an appropriate software package company to develop program, we hope it will help to support the process of change*”

Furthermore, the respondents consider other factors that facilitate and support the communication of knowledge to those involved in the change process. These include having a well documented project plan to guide the implementation by the Comptroller General’s Department (refer Table 7.15); well planned training programs, and professional publications and training courses within the university (refer Table 7.15).

Other highly ranked facilitators related to the support given by employees within the universities. The findings show no resistance to accounting change by employees and that the culture and mind-set within the university supports the change. Given the high power distance found in developing countries this support by employees was not unexpected.

9.4 Conclusion

Exploratory factor analysis (EFA) enabled the grouping of a number of variables to a smaller subset. The EFA results provide the group of factors that influence accounting change and the group of factors that affect the change process. Factors that influence accounting change presents in terms of the group of external factors (external incident for change, environmental factors, promoters of change and external user of information) and the group of internal factors (internal incident for change, institutional environment, producers of change and internal users of information). Factors that effected accounting change in term of barriers to change (confusers, delayers and frustrators) and facilitators of change (promoters of change, producers of change and

communicators of change). A test of the reliability of external and internal factors and barriers and facilitators were undertaken using Cronbach's Alpha (Cronbach 1951). The reliability coefficient for all factors suggested that the construct was reliable and factor analysis is appropriate to analyze. However, this study does not continue to conduct the Structure Equation Modelling (SEM) to test the full model of accounting change. This is because of the limitation of SEM preferred samples size at least 100 observations or larger whilst this research had only 63 observations.

Chapter 10

Conclusion

10.1 Introduction

The purpose of this chapter is to provide the conclusion and implications from the doctoral research. There are six sections. The first section provides an overview of the research, as well as its main objective, theoretical framework and research methodology. The following section describes the summary of the major findings. The next section presents the contribution and implications of the research and is followed by a discussion of the limitations of the research. Further, the recommendations for future research are examined and chapter summary given in the final section.

10.2 Revisiting an Overview of the Doctoral Research

The overall aim of this dissertation was to examine the process of accounting reform in the public sector in developing countries and in the environment of New Public Management (NPM). NPM is viewed as a component of corporate governance leading to improved organisational performance in terms of transparency, accountability and value for money in the public sector. The main objective of this study was to investigate factors influencing and affecting the process of accounting change in the Thai public sector with a focus on Thai public universities. Further, this research aims to explore management accounting change with a focus on cost techniques, namely activity based-costing (ABC). Accordingly, several specific research questions were addressed, including:

1. What factors influence accounting change in Thai public universities?
2. What are the major factors that have affected the success of the accounting change in Thai public universities?
 - 2.1 What factors can be barriers to the success of accounting change in Thai public universities?
 - 2.2 What factors act as facilitators to the success of accounting change in Thai public universities?

3. What new accounting systems and techniques have been adopted by Thai public universities?
4. What are the factors that influence and affect the use of ABC in Thai public universities?
5. Are there any university characteristics that may cause differences in the adoption of new accounting practices?

In order to respond to these research questions, the current study extends the accounting change literature by integrating previous research findings and accounting change models from both a private sector and public sector perspective (Cobb, Helliard & Innes 1995; Christensen 2002; Godfrey, Devlin & Merrouche 2001; Hopwood 1987; Innes & Mitchell 1990; Jackson & Lapsley 2003; Kasurinen 2002; Lapsley & Wright 2004; Luder 1992; Yamamoto 1999).

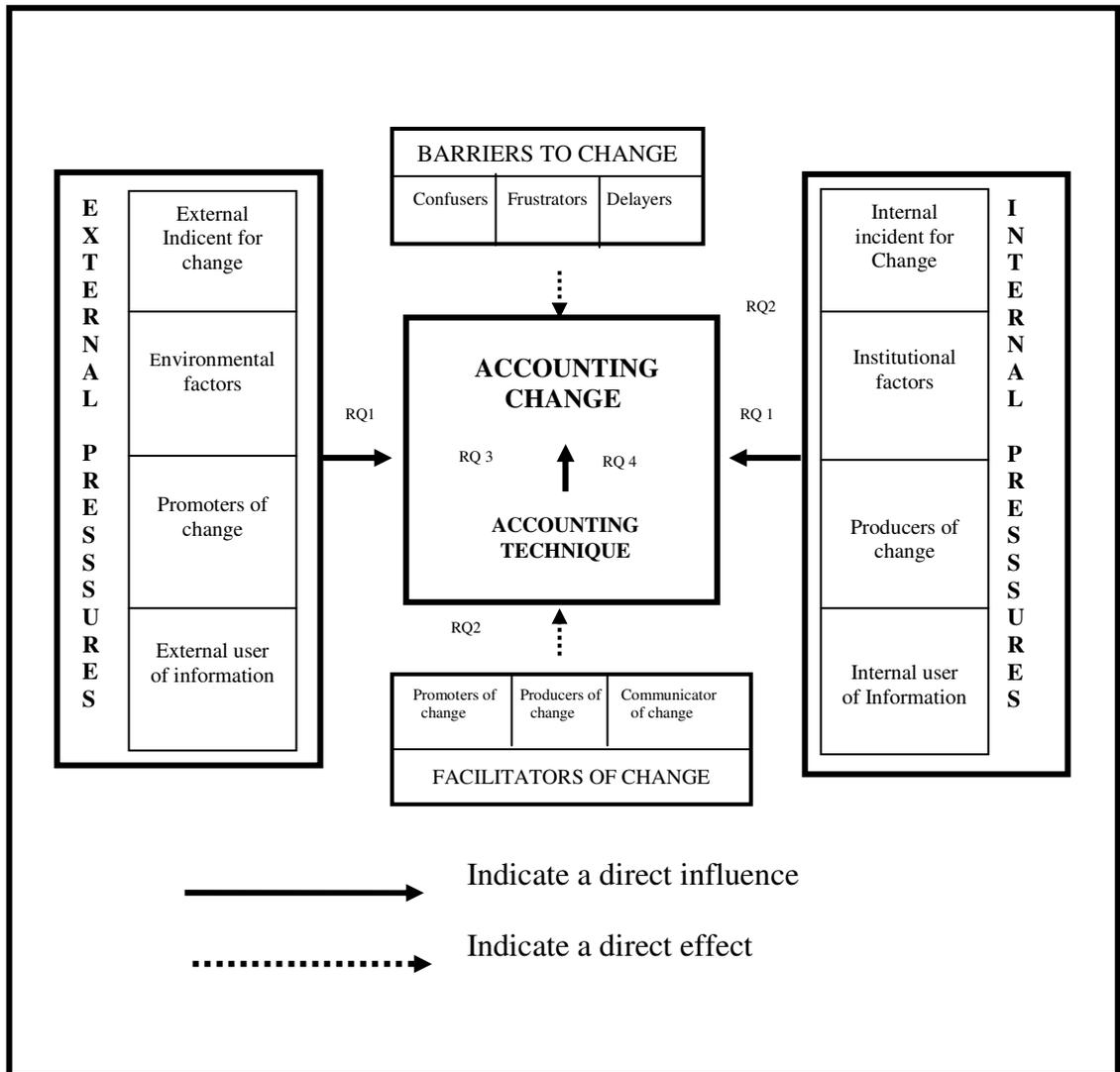
The original model of accounting change for the public sector was developed by Luder (1992) and is based on contingency theory. The model focuses on both the external and internal factors affecting the change process in order to understand both the stimuli for government accounting reform and measures of its success or failure. Other researchers who have used Luder's model in their research have further refined the model. Yamamoto (1999) focused on factors that influence specific types of accounting change. Godfrey, Devlin & Merrouche (2001) made modifications by highlighting factors influencing accounting change in developing countries. Christensen (2002) stresses the importance of key actors of accounting change. Additionally, this study has also incorporated the accounting change model in the private sector developed by Innes & Mitchell (1990), adapted by Cobb, Helliard & Innes (1995) and extended by Kasurinen (2002). Innes and Mitchell (1990) stress three types of factors - motivators, catalysts and facilitators to explain the causes of accounting change. Cobb, Helliard & Innes (1995) emphasized the role of individuals as leaders in the change process. Kasurinen (2002) focused on the barriers to change by dividing the barriers into three subcategories: confusers, frustrators and delayers.

The change models discussed above have been based on contingency theory. Contingency theory is a major theory that has been applied to explain the complex relationship between accounting change and organisational change. Contingency theory

is used to examine external and internal factors (contingent variables) which influence the need for accounting change such as an organisation's environment, structure and technology. Accounting change models help in understanding drivers for, facilitators of and barriers to change. Although there are differences between the factors of reform identified in the private sector and public sector models, both have similar ideas of accounting change practice.

This study seeks to understand the process of accounting change in a public sector agency. The contingency theory and accounting change model were applied for this current study to examine accounting change in Thai public universities and to investigate the research questions. Figure 10.1 illustrates the research framework for the study that was developed in Chapter 5. The re-presentation of the model highlights the contextual variables of accounting change to be investigated in this study. The contingent variables belong to several categories and are divided into five groups: 1) external pressures; 2) Internal pressures; 3) barriers to change; 4) facilitators of change; and 5) type of accounting change. Firstly, external pressures refer to external stimuli for change such as the organisational environment, promoters of change (both within and outside the organisation) and external users of information. Secondly, internal pressures refer to internal stimuli for change such as the institutional environment, producers of change and internal users of information. Thirdly, barriers to change refer to those factors categorised as confusers, delayers and frustrators which can delay the negatively impact on the change process. Fourthly, facilitators of change refer to the promoters of change, the producers of change and the communicators of change that given the momentum for the change. Finally, the type of accounting change refers to the development of new accounting techniques.

Figure 10.1: Accounting Change Model in Thai Public Universities



Thai public universities were chosen as an interesting research focus as public universities also have the option of transforming into autonomous universities (Kirtikarn 2004). It is necessary for autonomous universities to improve the budgeting and accounting systems to assist the universities in achieving self management of its financial affairs. Accounting can support this transformation process by providing more relevant and reliable information to enable the universities to be more accountable, transparent and provide services in the most economical manner (Kirtikarn 2003; Verheul 2002).

This study is based on a quantitative research method. All 78 Thai public universities were included in the sample. It used a quantitative research (mail survey) strategy by collecting and analysing primary data based on an anonymous self-reporting

questionnaire with closed questions using a 5 point Likert scale and open-ended questions (Bryman 2008; Creswell & Clark 2007). A paper-based mail questionnaire was selected as it was considered that an electronic questionnaire would not fit with the Thai cultural expectations. The questionnaire also included open-ended questions that provided the opportunity for respondents to write in additional comments throughout the different sections of the survey. The questionnaire was developed in English, with the Thai version translated by 2 professional translators and back translated into English to ensure the accuracy of the translation. The survey questions were based on the review of the literature. The questionnaire has also been tested and adapted based on the views of 3 Thai accountants in Thai universities and 3 Australian accounting academics.

The questionnaire was made into a booklet. The use of the booklet format provided a questionnaire that does not look too long or too difficult. The booklet, along with Research and Informed Consent information was sent to each university. These documents were accompanied by a letter supporting the research from the President of the researcher's university as would be expected in the Thai culture. The Chief Financial Officer (Comptroller) was chosen as the target respondent because they are the most suitable and relevant respondent to give views on accounting change in their university. The study also relied on a review of various publicly available documents such as government papers and reports.

From the 78 questionnaires, 63 Chief Financial Officers responded, which constitutes an 81% response rate. ANOVA tests were undertaken to detect response bias by identifying whether there was any statically significant differences in responses between the early response group and the late response group. However, the result revealed no significant differences ($p < 0.05$) between the groups.

10.3 Summary of the Major Findings

The major findings of the study are discussed in the following section. Discussion will focus on the descriptive analysis of findings, the Exploratory Factor Analysis findings and the comparative analysis findings.

Table 10.1 links the summary of findings to the research questions developed in chapter 5.

Table 10.1: Linking findings to research questions

Research Questions	Answer to Research Questions
<p>RQ1: What factors influence accounting change in Thai public universities?</p>	<p>The main stimuli for accounting change in the universities have come from both external and internal pressures. The need for improved corporate governance was behind many of the reforms in the Thai public sector. Specific stimuli included:</p> <ul style="list-style-type: none"> - External pressures - 1997 Thai economic crisis, government law, environment of NPM, International funding agencies and the need for cost accounting information to report to the government were external factors influenced accounting change in Thai public universities - Internal pressures - Changing nature of the university sector with many universities moving to autonomous status, and the need for all universities to be more accountable, has led to the need for more relevant information for financial management. - Due to a lack of costing information and the lack of a systematic accounting system to record and thereby control revenue and expenditure in Thai public universities, University management require improved information for planning and control purposes
<p>RQ2: What are the major factors that have affected the success of the accounting change in Thai public universities? RQ2.1: What factors can be barriers to the success of accounting change in Thai public universities? RQ2.2: What factors act as facilitators to the success of accounting change in Thai public Universities?</p>	<ul style="list-style-type: none"> - The major barriers related to confusers: a lack of understanding of the requirements, a lack of knowledge, lack of both a project and training plan, difficulty in designing a new financial system and a lack of technological resources such as lack of appropriate software packages and existing technology being unable to cope with the new government report requirements. - Delayer relate to not having enough full-time staff, lack of expertise and high cost of implementation. These factors have led to a delay in the completion of the government accounting reform - The major facilitators related to the commitment by the Thai government to the ADB for funding initiated the need for change. The promoters of change also related to the Comptroller General’s Department and the Office of Higher Education Commission which gave strong support to the accounting change in Thai public universities.

Table 10.1: Linking Answers to Research Questions (Continues)

Research Questions	Answer to Research Questions
<p>RQ3: What new accounting systems and techniques have been adopted by Thai public universities?</p>	<ul style="list-style-type: none"> - The majority of Thai public universities are implementing changes to both the financial and management accounting systems. The focus at present is on changes which include: the adoption of accrual accounting practices; adapting the budgeting system to suit block grant funding; and implementing cost control. - The majority of universities (31 universities) have adopted ABC. However, only a minority have completed the process.
<p>RQ4: What are the factors that influence and affect the use of ABC in Thai public universities?</p>	<ul style="list-style-type: none"> - High levels of external and internal authorities were important in the decision to adopt ABC. - The most important benefit from the ABC adoption was the ability to meet the government requirements for unit costing. - Problem identified during the ABC implementation were lack of necessary resources, such as an appropriate software package, and difficulty in gathering data on cost driver - The perceived benefits of ABC were slightly lower than expected benefit in Thai public universities. The reason for this finding could be that the university staff lacked an understanding of the change process and the time and resources necessary to fully implement ABC
<p>RQ.5 Are there any university characteristics that may cause difference in the adoption of accounting practice?</p>	<ul style="list-style-type: none"> - The type of university whether autonomous university or not, was found to have statistically significant relationship with the stage of accounting change. The autonomous status more likely to be in the implementation or completed stage than the planning stage. - However, there is no statistic can be conclude the characteristic of university on the adoption of ABC (type of university whether autonomous university, the age of university, and the size of the university as measured by the number of campuses and number of students).

10.3.1 Summary of Descriptive Analysis Findings

- The descriptive findings indicate that the majority of universities are implementing changes to both the financial accounting (100%) and management accounting systems (budgeting 96.8%, cost system 88.9% and performance measurement system 92.1%). However, to date only a small percentage of universities have been able to successfully complete the process of change.
- The motivation for reform in the Thai public sector was driven by an overriding need for improved corporate governance. One aspect of this was to improve financial management practices in line with NPM. To achieve this, the Thai government required its public agencies to change the accounting practices. Until the late 1990's government accounting was not only cash based but also undertaken using manual practices. Without accrual accounting the Thai government was not able to determine the cost of its service delivery or assess performance. Therefore, the Thai government required its public agencies, including the universities; to move from cash based to accrual based accounting. The changing nature of the university sector with universities moving to autonomous status, and the need for all universities to be more accountable have been important factors internally to promote accounting change to enable the provision of more relevant information for reporting purposes. University management would need to compare costs between different activities for decision making. A cash based system would not provide this information.
- The major barrier to accounting reform relates to the lack of technological resources specifically, lack of appropriate software packages and existing technology being unable to cope with the new government reporting requirements. Other problems relate to the lack of key producers of change, such as: not having enough full-time accounting staff; lack of staff with expertise in information systems; and lack of internal staff to monitor the change process. Other barriers include difficulty in designing a new financial system and lack of understanding and knowledge of data requirements. These factors have led to delays in the government accounting reform. However, staff resistance to

accounting change was not found to be a barrier in the case of Thai public universities.

- The internal and external promoters of change were important to support accounting change in Thai public universities. The major internal promoter was the top management of the university. The findings suggest that if there is strong enough support from top management then the pace of change will be faster. Support can be evidenced by the employment of adequate full time accounting staff with knowledge of private sector accounting practices and a willingness to invest in technology resources (IT staff and resources). The Comptroller General's Department and the Office of Higher Education were the key external promoters of change for Thai public universities. Furthermore, the training programs from the government and within the university were found to support and encourage the diffusion of knowledge necessary for the accounting change. The training courses would have been critical for the Thai staff as prior to the change process their accounting knowledge was limited to cash based system using manual practices. The adoption of accrual accounting using a computerised system would have presented a steep learning curve for university staff.
- Just less than half of the respondent universities (31 universities) are at the implementation stage of ABC with only a small percentage (16.15%) being able to successfully complete the process. The most important benefit from the ABC adoption was the ability to meet the government requirements for unit costing. High levels of encouragement from both external authorities and internal management of the universities were important in the decision to adopt ABC.
- Problems identified during the ABC implementation were lack of necessary resources, such as an appropriate software package, and difficulty by staff in gathering data on cost drivers. The perceived benefits of ABC were found to be slightly lower than the expected benefits of ABC. This could be due to university staff being too optimistic about the change given their lack of knowledge of the process at the time when determining the expected benefits.

- The bare majority of universities (32 universities) that had not adopted ABC lacked the necessary resources and knowledge to implement changes to the costing system. The universities experienced difficulty in collecting cost data and found it too costly to implement ABC.

10.3.2 Summary of Comparative Analysis Findings

To further examine the findings tests were conducted to assess whether the characteristics of each university had any impact on: the importance of accounting change, the stage of accounting change and the success of accounting change. The characteristics examined in this study included: the type of university (whether autonomous university or not), the age of the university, and the size of the university (as measured by the number of campuses and number of students). The findings indicate that the type of university has a significant relationship ($P < 0.05$) in relation to changes to the financial accounting system, budgeting system and cost accounting system. However, no relationship was found with the performance measurement system and auditing system. A closer look at the mean scores showed that more importance was given to the changes by those universities that either have or intend to become autonomous.

The type of university was also found to have a statistically significant relationship ($P < 0.05$) with the stage of change in the financial accounting system, management accounting systems (budgeting system and performance measurement system) and auditing system with the exception of the cost accounting system. Universities with autonomous status were more likely to be in the implementation or completed stage than the planning stage. However, there is no statistical significance that can be concluded between the other characteristics of the university on the current stage of accounting reform for each specific type of accounting change.

To understand more about those universities that had completed the change process a comparison was undertaken between those that had rates the change as either successful or unsuccessful. A significant relationship ($P < .05$) was found between the lack of full-time accounting staff and those universities that had rated the accounting change as

unsuccessful. This finding reinforces the critical role university employee's play (producer of change) in the change process.

This study also tested the characteristics of the university on the adoption of ABC. The results of the chi-square test show that the type of university (autonomous and non-autonomous public university) is not associated with the decision of whether or not to adopt ABC. Other characteristics such as the number of campuses, the age of the university and the number of students also did not have any association with the decision to adopt ABC. In addition, the result of the chi-square test also shows that the type of university (autonomous and non-autonomous public university) has no impact on the implementation stage of ABC. The number of campuses, the age of the university and the number of students also has no significant relationship. Moreover, the result of the chi-square test shows that the type of university (autonomous and non-autonomous public university) has no impact on the success of ABC. The result of the chi-square test also shows that the size of university (number of campuses and number of students) and the age of university have no impact on the success of ABC.

There is no statistical relationship that can be concluded between the characteristic of the university on ABC implementation. However further analysis, comparing the problems with the ABC implementation and whether or not the change was considered successful, the findings show a significant relationship ($P < .05$) between the universities who rate the ABC as unsuccessful and ABC problems.

The conclusion from the comparative analysis is that the type of university (whether autonomous university or not) influences the importance of accounting system change and the stage of change but there is no impact on the success of change. However, the type of university (whether autonomous university or not) the age of university (whether less or more campuses) and the size of university (included: the number of campuses and number of students) have no impact on ABC implementation.

10.3.3 Summary of Exploratory Factors Analysis (EFA) Findings

The Exploratory Factor Analysis (EFA) enabled the grouping of a number of factors to smaller subsets. Four groups of factors were tested: external factors, internal factors, barriers to change and facilitators of change. A test of the reliability of external and internal factors and barriers and facilitators were undertaken using Cronbach's Alpha (Cronbach 1951). The reliability coefficient for all factors suggested that the construct was reliable (all key variables above the alpha level 0.70) and that factor analysis was appropriate.

The EFA result grouped external factors into four smaller subsets: external incident for change, environmental factors, promoters of change and external users of information. Internal factors were grouped into four smaller subsets: internal incident for change, institutional factors, producers of change and internal users of information. Barriers were grouped into three smaller subsets: confusers, delayers and frustrators. Facilitators of change were grouped into three smaller subsets: promoters of change, producers of change and communicators of change. The external and internal factors explained the drivers for change while the barriers to and facilitators of change explained the effect of change. An analysis of the EFA findings is given below.

1. External Pressures

1.1 External Incident for Change: The 1997 Thai economic crisis was the key event in the first stage of accounting reform in the Thai public sector. This led to the need for financial accounting reform (cash to accrual accounting system) in line with NPM. Furthermore, government law (The Royal Decree Section 21) by the new government (reformer/key actor) hastened the speed of the change process for financial accounting, management accounting system (budgeting, costing and performance measurement) and auditing.

1.2 Environmental Factors: Environmental factors were found to force the change process in Thailand. Firstly, the concept of corporate governance and NPM introduced a new management practice for the public sector in developing countries. Secondly, the pressure from the Thai government who had a need to improve its accounting

information system to meet its objectives of transparency, accountability and value for money. Finally, the public pressure for universities to control university expenditure. The transforming of universities to autonomous status was viewed as the mechanism whereby the government could reduce funding.

1.3 Promoters of Change: The promoters of change (such as IMF, ADB) influenced government accounting change in Thai public universities. Moreover, the government initiative of using technology to upgrade the financial management system in line with NPM led to electronic government accounting reform in Thai public sector.

1.4 External users of Information: Momentum for the change was provided by the main external users of information (the political actors) such as the Comptroller General's Department and the Ministry of Education that supported the universities in the change process.

2. Internal Pressures

2.1 Internal Incident for Change: The Thai Higher Education Long Range Plan was the main internal event that was a catalyst for accounting change in Thai public universities.

2.2 Institutional Factors: Internal factors influencing accounting change in Thai public universities include: a lack of costing information and the lack of a systematic accounting system to record and thereby control revenue and expenditure. Prior to the changes universities were using a manual based cash system which would not have provided decision-relevant cost information. Thus, it was necessary for universities to improve financial information for university strategic planning, budgeting and decision making.

2.3 Producers of Change: The Ministry of Education was the main catalyst to promote accounting change in Thai public universities. However, the high level of support given to university staff through the training courses will enable the adopters to be skilled in the accounting change being implemented. The local consultant and part-time

consultant were also important to transfer skill and knowledge (The Office of Ministry of Education 2006).

2.4 Internal Users of Information: In the Thai public sector the need for accounting information has obviously taken a top-down approach with the leader of the government initiating and supporting the change process. It would appear that the leaders of the university have also worked with outside authorities and given strong support for the change process. The evidence shows that the internal users of information were the top management of university (president and university committee) who wanted upgraded systems to meet their need for accounting information for financial management.

3. Barriers to Change

3.1 Confusers: In Thai public universities, the factor analysis and finding show the respondents consider the confusers relate to: a lack of understanding of the requirements; a lack of knowledge; the lack of both a project and training plan; difficulty in designing a new financial system; and existing technology not being able to cope with the new requirement. As mentioned previously given that staffs were skilled in manual practices the leap to computerised accrual accounting would have been a steep learning curve.

3.2 Delayers: The finding of factor analysis show the respondent consider delayers relate to not having enough full-time staff, lack of autonomy from the government, lack of expertise and the high cost of implementation. These factors have led to a delay in the completion of the government accounting reform.

3.3 Frustrators: The factor analysis and finding show the respondents consider frustrators relate to a lack of support, involvement and communication between the promoters, producers and users of information. This finding suggest that if there is a lack of involvement by those authorities that oversee or support public universities then the authorities will negatively impact the change process and thereby act as frustrators.

4. Facilitators of Change

4.1 Promoters of Change: International aid agencies assisted the Thai government to restore its position after the Asian economic crisis. As part of the funding agreements, the Thai government had to commit to financial reform. Therefore, the reform was supported from the highest levels who wanted the change to be successful. Within the government the promoters of change in relation to the Thai public universities were the Comptroller General's department and the Office of Higher Education Commission which gave strong support to the accounting change.

4.2 Producers of Change: The factor analysis and finding show the respondents consider the producers of change relate to those working within the university. To facilitate the change there needs to be adequate internal full-time accounting staff (producers of change) with an understanding of the data requirement. Accounting staff also need to have adequate computer and technological resources and also a well planned training program for skill diffusion.

4.3 Communicators of Change: The factor analysis and finding show the respondents consider the communicators of change relate to having adequate resources such as computer technology, appropriate software package and well documented project plan to guide the implementation.

10.4 Implications for Theory, Practice and Methodology

This section presents the implication of the findings. The discussion is divided into three parts: implication for theory, implication for practice and implication for methodology.

10.4.1 Implications for Theory

This study makes several contributions to accounting reform in the public sector literature. First, there has been limited research in the understanding of factors influencing and affecting accounting reform in developing countries such as Thailand, particularly in Thai public universities. This research makes an incremental contribution

to the literature. It also helps to overcome the limitation that the literature lacks an integrative framework that conceptualizes multifaceted internal and external factors influencing accounting change and factors that can be barriers to and facilitators of change in developing countries. The research framework for this study has developed an accounting change model which further contributes to the contingency theory and provides a foundation for further research in this field in developing countries.

Secondly, this research study supports the theoretical viewpoint of the contingency theory. Contingency theory is used to examine external and internal factors (contingent variables) which influence the need for accounting change. The findings from this study indicate that an organisation's environmental factors (such as economic, political and technological) are major factors that explain the complex relationship between accounting and organisational change in Thai public universities. The results of this research also support the view that different environmental factors influence accounting change in different organisations (Hopwood 1980).

Thirdly, this study provides insights into an accounting change model that is based on both private sector (Cobb, Helliard & Innes 1995; Innes & Mitchell 1990; Kasurinen 2002) and public sector (Christensen 2003; Godfrey, Devlin & Merrouchel, 2001; Luder 1990; Yamamoto 1999) models. By incorporating the important drivers for change, barriers to and facilitators of change, this study advances understanding of the process of change in a specific public agency (public universities) and economic environment (developing country).

Furthermore, the study contributes to the understanding of the environment that represents a principal stimulus for government accounting change in both the external and internal environment of the organisation (Cobb, Helliard & Innes 1995; Christensen 2002; Godfrey, Devlin & Merrouche 2001; Hopwood 1987; Innes & Mitchell 1990; Jackson & Lapsley 2003; Kasurinen 2002; Lapsley & Wright, 2004; Luder 1992; Yamamoto 1999). The findings indicate that economic crisis and government law are stimuli for change in Thai government accounting and confirm Luder's (1992) findings. Additionally, this study highlights that the internal stimuli (The Thai Higher Education Long Range Plan) is also important for change. The findings of this study repeat the necessity of understanding the environmental conditions that explain an event which

occurs in the initial stages and influences government accounting change in developing countries. The findings in the study also correspond with the literature and confirm that both external and internal stimuli are important factors influencing accounting change (Christensen 2003; Godfrey, Devlin & Merrouche 2001; Innes & Mitchell, 1990; Luder 1990; Yamamoto 1999).

10.4.2 Implications for Management Practice

This study offers some implications that inform managerial practice. Firstly, in a developing country, although accounting reform in the public sector is more likely to be motivated by the government, there is no evidence that this guarantees the success of the accounting reform by the government. However, as the government system is highly centralised in developing countries, the commitment of top management is critical to support any reforms. Strong support by top management is also critical and can be seen by the employment of enough full-time accounting staff, the availability of the right technology and appropriate accounting resources. By providing such resources the top management gives the momentum for change which will lead to a faster rate of change.

Another important area which needs attention from the Thai government and policy makers is lack of research and development (R&D) in government accounting area. Reference to the six steps of Lewin's (1952) change model provides the basis for planning the change itself. The six steps are: (1) Understanding the pressure for change (2) Defining the need for change (3) Analysis of the problem of change (4) Planning for the change (5) Implementing the change and (6) Follow up on the change. This research may assist the Thai government in supporting and promoting the R & D in government accounting reform.

In addition to encourage good governance and new public management, the Thai government should promote the change in government accounting practice to enable accountability, transparency and value for money to stakeholder (users of information and people of the country) of public sector. This thesis has identified that lack of resource such as financial support, lack of accounting staff with knowledge of private sector accounting practices and lack of appropriate accounting technology support are the major problems that Thai public universities have encountered. This suggests that

the Thai government should provide funds and support for R& D, computer technology and resources related to development of government accounting innovation.

This study has highlighted the difficulties in moving from manual cash based accounting system to a computerized accrual based accounting system. Employees are faced with a steep learning curve to be able to acquire the skills and knowledge necessary to contribute to the change process. Change will be slowed if necessary training and skill development happens concurrently with the change activities. Staff development must come first.

10.4.3 Implications for Methodology

Due to the complexity of the prior government accounting change model, most government accounting change research employs a case study. This study makes a contribution to methodology by using a quantitative research method. Exploratory Factor Analysis (EFA) enabled the grouping factors to be broken into smaller subsets of more meaningful variables. It is also suggested that further research should employ advanced statistical techniques such as structural equation modelling (SEM) to test hypotheses. This is because SEM technique is more powerful than traditional regression analysis. The added benefits of using an SEM model are being able to examine the relationship between factors at the whole model rather than on only one relationship.

10.5 Limitation of the Study

There are several limitations to this study which need to be taken into account. The first limitation of this study is being able to generalise results. The study was conducted using a single government public agency in Thailand (only public universities). Thus, one should be cautious in using the interpretations and applying to other public agencies and countries.

The second limitation is that this study relies on data collected from only one respondent per university, which has reliability concerns. The use of single informants can create the possibility of single-source bias. However, the Chief Financial Officers (CFO) who were chosen to complete the questionnaires are expected to be knowledgeable about the overall situation and activities relating to accounting reform in

Thai public universities. They are the most suitable and relevant respondent to obtain the views and opinions on accounting change in Thai public universities.

The third limitation, relates to the sample size in this current study. All 78 Thai public universities were sampled, but the small sample size reduces the power of the statistical tests. In regards to the sample Hair et al. (2006) suggests that Exploratory Factor Analysis (EFA) should have a sample size at least 50 observations with a preferred sample size of 100 or larger.

The fourth limitation is associated with the survey questionnaire method. Although care was taken to reduce the limitation of the method, for example the survey was adopted from prior research and strong evidence of literature review from both public and private sector perspective, possible biases may still exist.

10.6 Recommendation for Further Research

Apart from the limitations of the current study, the present research provides the opportunity for future research as follows:

First, the accounting change model used to respond to the research questions could be applied to other public sector agencies to understand the process of change to identify any differences between agencies and the approach to the process of accounting change.

Second, increasing the number of public agencies studied to allow a comparative analysis. The comparison should include the importance of the accounting innovation used in each organisation and the diffusion method used for the accounting techniques.

Third, increasing the number of respondents could enable a more positivist approach and allow for statistical testing of hypotheses. For example expand the targeted respondents to include the users of information, producers of change and promoters of change.

Fourth, the use of in-depth interviews to examine the process of change to closely describe the current situation and knowledge of accounting reform in Thailand. The views of interviewees may indicate other factors that actually influence and affect accounting change in individual universities.

Fifth, to further investigate the role of accounting in supporting organisational change and concern about sustainability. Burn & Scapens (2000) provide an institutional framework to explore the role of management accounting practice in term of rules and routines. Their purpose is to open the view that “management accounting practice can both shape and be shaped by the institutions that govern organisational activity” (p.5). This would enable a more in depth understanding of the process of change.

Sixth, the Exploratory Factor Analysis (EFA) findings in this study suggest testing hypotheses. For example which group of factors are the main factors that influenced universities to change their accounting practice? and which group of factors are the most important barriers and facilitators impacting on the success of change? This also suggests further research that employs advanced statistical techniques such as structural equation modelling (SEM) to test hypotheses. SEM technique is more powerful than traditional regression analysis. The component of SEM includes exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). This study focused only on EFA. The highlight of the SEM model is that it examines the relationship between factors at the whole model rather than only for one relationship. For example SEM can test theories that describe all of the relationships among variables in the accounting change model.

10.7 Chapter Summary

Corporate governance reforms in Thailand were prompted by factors relating to the 1997 Asian economic crisis and the structural weakness in the Thai economic system. New Public Management (NPM) principles have been adopted to satisfy these requirements and are viewed as a component of good governance which should lead to improved organisational performance in the Thai public sector. The adoption of a NPM focused reform has led to changes in the accounting practices of Thai public universities

towards more private sector practices, to allow universities to provide information to show accountability, transparency of financial matters and show evidence of value for money, with a focus on results rather than processes.

The overall aim of this dissertation was to examine the process of accounting reform in the public sector in developing country, Thailand. The results of this study contribute to an understanding of accounting reform in the public sector with a focus on public universities in a developing country. The accounting change model applied was adapted from many researchers (both public and private sector) to examine factors influencing accounting change. It is clear that this current accounting change model can be applied to other organisations both public and private. Additionally, accounting systems (financial accounting, management accounting and auditing) employed by Thai public universities have been seen as one of tools to support the transformation of public universities to autonomous public universities. There is the belief that the capacity for good governance within autonomous universities will be strengthened with new accounting practice. Thus, this doctoral research makes an incremental contribution to the literature on accounting reform in the public sector in developing countries.

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Appendices

Appendix 1: The Ethics Approval Letter

To: Dr Judy Oliver/Ms Phetphairin Upping, FBE
cc Dr Toby Harfield, FBE

Dear Judy and Phetphairin Upping

SUHREC Project 2009/202 Accounting Change in Thai Public universities
Dr Judy Oliver, FBE; Ms Phetphairin Upping
Approved Duration: 3/09/2009 to 30/08/2010

Ethical review of the above project protocol was undertaken on behalf of Swinburne's Human Research Ethics Committee (SUHREC) by a SUHREC Subcommittee (SHESC3) at a meeting held 3 September 2009.

I am pleased to advise that, as submitted to date, the project has approval to proceed in line with standard on-going ethics clearance conditions here outlined.

- All human research activity undertaken under Swinburne auspices must conform to Swinburne and external regulatory standards, including the National Statement on Ethical Conduct in Human Research and with respect to secure data use, retention and disposal.
- The named Swinburne Chief Investigator/Supervisor remains responsible for any personnel appointed to or associated with the project being made aware of ethics clearance conditions, including research and consent procedures or instruments approved. Any change in chief investigator/supervisor requires timely notification and SUHREC endorsement.
- The above project has been approved as submitted for ethical review by or on behalf of SUHREC. Amendments to approved procedures or instruments ordinarily require prior ethical appraisal/ clearance. SUHREC must be notified immediately or as soon as possible thereafter of (a) any serious or unexpected adverse effects on participants and any redress measures; (b) proposed changes in protocols; and (c) unforeseen events which might affect continued ethical acceptability of the project.
- At a minimum, an annual report on the progress of the project is required as well as at the conclusion (or abandonment) of the project.
- A duly authorised external or internal audit of the project may be undertaken at any time.

Please contact the Research Ethics Office if you have any queries about on-going ethics clearance, citing the SUHREC project number. Chief Investigators/Supervisors and student researchers should retain a copy of this email as part of project record-keeping.

Best wishes for the project.

Yours sincerely

Keith Wilkins
Secretary, SHESC3

Keith Wilkins
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Swinburne Research (H68)
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Appendix 2: A Letter to the President of RMUTI



Swinburne University of Technology
Faculty of Business and Enterprise

[Date to be added]

President

Rajamangala University of Technology Isan (RMUTI)
744 Suranarai Road,
Muang, NakhonRatchasima 30000

I am a Senior Lecturer at Rajamangala University of Technology Isan (RMUTI), Sakon Nakhon campus and currently on leave for doctoral study at the Swinburne University of Technology, in Melbourne, Australia.

My research project title is: *"Accounting Change in Thai Public Universities"* under the guidance of Dr. Judy Oliver, Senior Lecturer in Accounting in the Faculty of Business and Enterprise.

This is a request for a letter of support for my research.

This doctoral research aims to build on the contingency model developed to help understand the stimuli and factors influencing implementation of government accounting reform and to measure the success or the failure of that accounting reform. We are therefore attempting to discover whether or not New Public Management practice has contributed, directly or indirectly, to successful accounting change in Thailand.

All Thai public universities to be invited to participate in this study because they are a well defined group that has been required to change their accounting practice. We will explore both internal and external pressures that have influenced public university accounting change. In addition, the study will focus on identifying barriers and facilitators of success of accounting change at different types of university.

Each university will be sent a 40 question survey like the one attached to this letter. We believe that a letter of support from the president of RMUTI to accompany the survey being sent to the other 77 public universities would assist this research by encouraging those universities to participate in the study. It is expected that a large representative sample would provide significant useful information on accounting change programs within the university sector. We believe that being able to identify the complexity of the accounting change process would benefit RMUTI and the public university sector as a whole.

Yours sincerely,

Dr. Judy Oliver, Senior Lecturer, Accounting
PhD Candidate Co-ordinating Supervisor

Phetphairin Upping
Swinburne University PhD Candidate

Appendix 3: A Consent Information Statement



Faculty of Business and Enterprise Swinburne University of Technology Project Informed Consent and Information Statement

Project Title: Accounting Change in Thai Public Universities

[Date to be added]

Dear **[name of Chief Financial Officer to be added]**,

This letter is to invite you (or your nominee) to participate in my PhD research project under the guidance of Dr Judy Oliver who is a Senior Lecturer of Accounting in the Faculty of Business and Enterprise, at Swinburne University of Technology in Melbourne, Australia.

The name of your university has been obtained from the Commission on Higher Education website. I telephoned your university earlier and they provided me with your name.

This doctoral research aims to build on the contingency model developed to help understand the stimuli and factors influencing implementation of government accounting reform and to measure the success or the failure of that accounting reform. We are therefore attempting to discover whether or not New Public Management practice has contributed, directly or indirectly, to successful accounting change in Thailand.

All Thai public universities to be invited to participate in this study because they are a well defined group that has been required to change their accounting practice. We will explore both internal and external pressures that have influenced public university accounting change. In addition, the study will focus on identifying barriers and facilitators of success of accounting change at different types of university.

Attached to this letter is a survey of 40 questions asking about accounting change in relation to your university. If you agree to participate in this survey, completing the questionnaire will take about 30 minutes. Please seal the completed survey in the enclosed pre-addressed and stamped envelope and return it to me. If you have not returned the questionnaire by **[date to be added]** you will receive a second letter to remind you of the possibility of participating in the study.

Your completion and return of the questionnaire is taken as your Informed Consent to participate in this research which means that you understand and agree that:

- Your participation is voluntary.
- All questions about the study have been answered to your satisfaction.
- All your responses will be strictly confidential.
- Your name or the name of your university will not be used in reporting the findings of the study thus ensuring your privacy and anonymity.
- Some non-attributed quotes may be used from the comments you provide on the questionnaire.

The results of this survey will be used in my PhD thesis and possibly other co-authored academic publications. Following the completion of the study, all information will be retained and disposed of according to the current *Swinburne University Policy on the Conduct of Research*.

A summary of the findings from this study will be sent to all participating universities at the completion of the study.

If you have any questions, please contact me or my Co-ordinating Supervisor.

Phetphairin Upping:

In Thailand: 66-4-2772258

In Australia: 61-4-34631490 or 61-3-32145871 (Melbourne, Australia)

E-mail: pupping@groupwise.swin.edu.au

Dr. Judy Oliver, Co-ordinating Supervisor:

In Australia: 61-3-92148985

E-mail: juditholiver@swin.edu.au

If you chose not to participate, thank you for taking the time to read this letter.

If you chose to complete and return the questionnaire, we would like to take this opportunity to express our gratitude.

Yours sincerely,

Phetphairin Upping
PhD candidate

Dr. Judy Oliver
Senior Lecturer, Accounting
Co-ordinating Supervisor

This project has been approved by or on behalf of Swinburne's Human Research Ethics Committee (SUHREC) in line with the *National Statement on Ethical Conduct in Research Involving Humans*.

If you have any concerns or complaints about the conduct of this project, you can contact:

Research Ethics Officer, Swinburne Research (H68),
Swinburne University of Technology,
P O Box 218, Hawthorn, Melbourne, Victoria, AUSTRALIA 3122.
Tel +61 3 9214 5218
or resethics@swin.edu.au

Please retain this information for future reference

Appendix 4: A Reminder Letter



Faculty of Business and Enterprise Swinburne University of Technology Project Informed Consent and Information Statement

Project Title: Accounting Change in Thai Public Universities

[Date to be added]

Dear **[name of Chief Financial Officer to be added]**,

This letter is to remind you of the letter sent **[date to be added]** inviting you (or your nominee) to participate in my PhD research project under the guidance of Dr Judy Oliver who is a Senior Lecturer of Accounting in the Faculty of Business and Enterprise, at Swinburne University of Technology in Melbourne, Australia.

The name of your university has been obtained from the Commission on Higher Education website. I telephoned your university earlier and they provided me with your name.

This doctoral research aims to build on the contingency model developed to help understand the stimuli and factors influencing implementation of government accounting reform and to measure the success or the failure of that accounting reform. We are therefore attempting to discover whether or not New Public Management practice has contributed, directly or indirectly, to successful accounting change in Thailand.

All Thai public universities to be invited to participate in this study because they are a well defined group that has been required to change their accounting practice. We will explore both internal and external pressures that have influenced public university accounting change. In addition, the study will focus on identifying barriers and facilitators of success of accounting change at different types of university.

Attached to this letter is a survey of 40 questions asking about accounting change in relation to your university. If you agree to participate in this survey, completing the questionnaire will take about 30 minutes. Please seal the completed survey in the enclosed pre-addressed and stamped envelope and return it to me.

Your completion and return of the questionnaire is taken as your Informed Consent to participate in this research which means that you understand and agree that:

- Your participation is voluntary.
- All questions about the study have been answered to your satisfaction.
- All your responses will be strictly confidential.
- Your name or the name of your university will not be used in reporting the findings of the study thus ensuring your privacy and anonymity.
- Some non-attributed quotes may be used from the comments you provide on the questionnaire.

The results of this survey will be used in my PhD thesis and possibly other co-authored academic publications. Following the completion of the study, all information will be retained and disposed of according to the current *Swinburne University Policy on the Conduct of Research*.

A summary of the findings from this study will be sent to all participating universities at the completion of the study.

If you have any questions, please contact me or my Co-ordinating Supervisor.

Phetphairin Upping:

In Thailand: 66-4-2772258

In Australia: 61-4-34631490 or 61-3-32145871 (Melbourne, Australia)

E-mail: pupping@groupwise.swin.edu.au

Dr. Judy Oliver, Co-ordinating Supervisor:

In Australia: 61-3-92148985

E-mail: juditholiver@swin.edu.au

If you chose not to participate, thank you for taking the time to read this letter.

If you chose to complete and return the questionnaire, we would like to take this opportunity to express our gratitude.

Yours sincerely,

Phetphairin Upping
PhD candidate

Dr. Judy Oliver
Senior Lecturer, Accounting
Co-ordinating Supervisor

This project has been approved by or on behalf of Swinburne's Human Research Ethics Committee (SUHREC) in line with the *National Statement on Ethical Conduct in Research Involving Humans*.

If you have any concerns or complaints about the conduct of this project, you can contact:

Research Ethics Officer, Swinburne Research (H68),
Swinburne University of Technology,
P O Box 218, Hawthorn, Melbourne, Victoria, AUSTRALIA 3122.
Tel +61 3 9214 5218
or resethics@swin.edu.au

Please retain this information for future reference

Appendix 5: A Letter to the President of RMUTI (Thai version)



Faculty of Business and Enterprise Swinburne University of Technology Project Informed Consent and Information Statement

จดหมายขอความอนุเคราะห์สนับสนุนข้อมูลเพื่องานวิจัยปริญญาเอก

[Date to be added]

เรียน อธิการบดีมหาวิทยาลัยเทคโนโลยีราชมงคลธัญบุรี

มหาวิทยาลัยเทคโนโลยีราชมงคลธัญบุรี

744 ถนนสุรนารายณ์

อ.เมือง จ.นครราชสีมา 30000

ข้าพเจ้า นางสาว เพชรไพโรจน์ อุบิ๊ง ตำแหน่ง ผู้ช่วยศาสตราจารย์ระดับ 6 และปัจจุบันได้รับทุนลาศึกษาต่อระดับปริญญาเอก ณ Swinburne University of Technology ประเทศออสเตรเลีย กำลังทำการศึกษาทางวิจัยภายใต้หัวข้อ “การเปลี่ยนแปลงทางบัญชีในมหาวิทยาลัยของรัฐในประเทศไทย” ข้าพเจ้ามีความประสงค์ขอความอนุเคราะห์จากท่านในการออกจดหมาย เพื่อขอความร่วมมือจากมหาวิทยาลัยของรัฐในประเทศไทย ในการตอบแบบสอบถาม และให้การสนับสนุนข้อมูลเพื่องานวิจัยในระดับปริญญาเอกในครั้งนี้

งานวิจัยในครั้งนี้มีวัตถุประสงค์ที่จะศึกษาปัจจัยที่มีอิทธิพลต่อการเปลี่ยนแปลงทางบัญชี เทคนิคทางบัญชี ความต้องการข้อมูลต้นทุน รวมทั้งเพื่อศึกษาปัญหาและอุปสรรคในการเปลี่ยนแปลงการจัดทำบัญชีในมหาวิทยาลัย โดยผลที่ได้จากการวิจัยดังกล่าว คาดว่าจะเป็นประโยชน์ต่อการพัฒนาระบบบัญชีในมหาวิทยาลัยของรัฐในประเทศไทย และสะท้อนภาพรวมการเปลี่ยนแปลงทางบัญชีในมหาวิทยาลัยของรัฐ รวมถึงประโยชน์ต่อผู้มีส่วนเกี่ยวข้องในการเปลี่ยนแปลงทางบัญชี

งานวิจัยนี้จะเก็บรวบรวมข้อมูลโดยการใช้แบบสอบถามส่งไปยังมหาวิทยาลัยของรัฐทั้งหมด จำนวน 78 แห่งในประเทศไทย ซึ่งประกอบด้วยมหาวิทยาลัยของรัฐและมหาวิทยาลัยในกำกับของรัฐ เพื่อขอความอนุเคราะห์ในการตอบแบบสอบถามงานวิจัยครั้งนี้

ข้าพเจ้าหวังเป็นอย่างยิ่งว่า จดหมายสนับสนุนงานวิจัยของท่าน จะช่วยให้ได้รับความร่วมมือจากมหาวิทยาลัยของรัฐ และมหาวิทยาลัยในกำกับของรัฐในการตอบแบบสอบถาม และผลที่ได้จากการวิจัยนี้เป็นประโยชน์ต่อการพัฒนาระบบบัญชีของมหาวิทยาลัยในประเทศไทย

ขอแสดงความนับถือ

เพชรไพโรจน์ อุบิ๊ง
นักศึกษาระดับปริญญาเอก

ดร. จูดี โอลิเวอร์
อาจารย์ที่ปรึกษา

Appendix 6: A Consent Information Statement (Thai version)



Faculty of Business and Enterprise Swinburne University of Technology Project Consent Information Statement

หัวข้องานวิจัย: การเปลี่ยนแปลงทางบัญชีในมหาวิทยาลัยของรัฐในประเทศไทย

[Date to be added]

เรียน [name of Chief Financial Officer to be added],

ข้าพเจ้า นางสาว เพชรไพโรจน์ อุบิ๊ง ตำแหน่งผู้ช่วยศาสตราจารย์ ระดับ 6 สังกัดมหาวิทยาลัยเทคโนโลยีราชมงคลธัญบุรี วิทยาเขต สกลนคร ปัจจุบันกำลังอยู่ระหว่างการลาศึกษาต่อระดับปริญญาเอก ณ Swinburne University of Technology ประเทศออสเตรเลีย และกำลังทำการศึกษาวิทยานิพนธ์ภายใต้หัวข้อ “การเปลี่ยนแปลงทางบัญชีในมหาวิทยาลัยของรัฐในประเทศไทย” ข้าพเจ้ามีความประสงค์จะขอความอนุเคราะห์จากท่าน ซึ่งท่านเป็นผู้ที่เกี่ยวข้องกับการดูแลระบบงานบัญชีในมหาวิทยาลัยของท่าน ในการตอบแบบสอบถามที่แนบมาเกี่ยวกับเจตนาฉบับนี้พร้อมด้วยของติดอากรแสตมป์จำนวนหนึ่งถึงข้าพเจ้า ท่านสามารถมอบหมายให้หัวหน้างานบัญชีหรือพนักงานบัญชีที่เกี่ยวข้องกับงานบัญชีในมหาวิทยาลัยของท่านตอบแบบสอบถามแทนท่านได้

ข้าพเจ้าได้ส่งจดหมายถึงท่านตามที่อยู่ของมหาวิทยาลัยที่ปรากฏในเวปไซต์ของสำนักงานคณะกรรมการการอุดมศึกษา ข้าพเจ้าหวังเป็นอย่างยิ่งว่าข้อมูลที่ได้รับจากท่านจะเป็นประโยชน์อย่างยิ่งต่อการศึกษาครั้งนี้ ข้าพเจ้าจะจัดส่งข้อสรุปผลงานที่ได้จากการศึกษาครั้งนี้ให้กับท่านทราบ หลังจากงานวิจัยนี้เสร็จสมบูรณ์

งานวิจัยครั้งนี้มีวัตถุประสงค์ที่จะศึกษาถึงปัจจัยที่มีอิทธิพลต่อการเปลี่ยนแปลงทางบัญชี เทคนิคทางบัญชี ความต้องการข้อมูลต้นทุนรวมทั้งเพื่อศึกษาปัญหาและอุปสรรคในการเปลี่ยนแปลงการจัดทำบัญชีในมหาวิทยาลัย ผลที่ได้จากการวิจัยดังกล่าว คาดว่าจะเป็นประโยชน์ต่อการพัฒนาระบบบัญชีของมหาวิทยาลัยในประเทศไทย และสะท้อนภาพรวมการเปลี่ยนแปลงทางบัญชีในด้านต่างๆ ที่เกิดขึ้นภายในมหาวิทยาลัย

งานวิจัยนี้จะสำรวจจากมหาวิทยาลัยของรัฐ 78 แห่งในประเทศไทย เพื่อขอความอนุเคราะห์ในการตอบแบบสอบถามงานวิจัยครั้งนี้

หากท่านยินดีที่จะให้ความอนุเคราะห์ในการตอบแบบสอบถามงานวิจัยนี้ ซึ่งใช้เวลาประมาณ 30 นาที กรุณาตอบแบบสอบถามและส่งกลับถึงข้าพเจ้าโดยแนบใส่ซองจดหมายติดแสตมป์ที่เจ้าหน้าที่เจ้าหน้าที่ของถึงข้าพเจ้า ภายในวันที่ [Date to be added]

ข้อมูลทั้งหมดที่ได้จากการวิจัยครั้งนี้ จะถูกเก็บในรูปแบบรายงานวิทยานิพนธ์ปริญญาเอกและถูกตีพิมพ์เพื่อการศึกษา ข้อมูลทั้งหมด จะถูกเก็บเป็นความลับ ทุกคำตอบของท่านจะถูกนำไปใช้ในลักษณะของตัวเลข โดยไม่สามารถระบุเจาะจงข้อมูลต่างๆ และจะไม่สามารถระบุได้ว่ามาจากมหาวิทยาลัยใด

หากท่านมีความประสงค์ต้องการข้อมูลเพิ่มเติม หรือหากมีข้อสงสัยประการใด ติดต่อข้าพเจ้าได้ที่เบอร์ 66-8-7234-7853 (ประเทศไทย) หรือ 61-4-3463-1490 (ออสเตรเลีย) (E-mail: pupping@groupwise.swin.edu.au) หรือ ดร. จูดี โอลิเวอร์ ได้ที่เบอร์ 61-3-9214-8985 (E-mail: juditholiver@groupwise.swin.edu.au) หรือ ที่อยู่ มหาวิทยาลัยเทคโนโลยีราชมงคลธัญบุรี วิทยาเขตตลิ่งชัน 199 หมู่ 3 ตำบลพงโคก อำเภอพงโคก จังหวัดสุพรรณบุรี 47160

ขอขอบพระคุณอย่างสูง ที่ท่านให้ความกรุณาพิจารณางานวิจัยนี้ ไม่ว่าท่านจะยินดีที่จะให้ความอนุเคราะห์ในการตอบแบบสอบถาม งานวิจัยนี้หรือไม่

ขอแสดงความนับถือ

เพชรไพรัตน์ อุบียง
นักศึกษาระดับปริญญาเอก

ดร. จูดี โอลิเวอร์
อาจารย์ที่ปรึกษา

งานวิจัยนี้ได้รับการรับรองจากคณะกรรมการด้านจรรยาบรรณงานวิจัยของมหาวิทยาลัย Swinburne หากท่าน มีข้อสงสัยหรือต้องการร้องเรียนเกี่ยวกับงานวิจัยนี้ ท่านสามารถแจ้งมาได้ที่

Research Ethics Officer, Swinburne Research (H68),
Swinburne University of Technology, P O Box 218, Hawthorn, Melbourne, Victoria,
AUSTRALIA 3122.
Tel + 61 3 9214 5218
หรือ resethics@swin.edu.au

“โปรดเก็บข้อมูลนี้ไว้เพื่ออ้างอิงในอนาคต”

Appendix 7: A Reminder Letter (Thai version)



Faculty of Business and Enterprise Swinburne University of Technology Project Informed Consent and Information Statement

จดหมายแจ้งเตือนการตอบแบบสอบถามงานวิจัยปริญญาเอก

หัวข้องานวิจัย: การเปลี่ยนแปลงทางบัญชีในมหาวิทยาลัยของรัฐในประเทศไทย

[Date to be added]

เรียน **[name of Chief Financial Officer to be added]**,

เนื่องด้วยข้าพเจ้า นางสาว เพชรไพรริน อุปปีง นักศึกษาปริญญาเอก จาก Swinburne University of Technology ประเทศออสเตรเลีย กำลังทำการศึกษางานวิจัยภายใต้หัวข้อ “การเปลี่ยนแปลงทางบัญชีในมหาวิทยาลัยของรัฐในประเทศไทย” ยังไม่ได้รับการตอบกลับแบบสอบถามจากท่าน จึงมีความประสงค์ขอความอนุเคราะห์จากท่านซึ่งเป็นผู้บริหารที่เกี่ยวข้องกับระบบบัญชีในมหาวิทยาลัย ในการตอบแบบสอบถามที่แนบมากับจดหมายฉบับนี้พร้อมด้วยซองติดอากรแสตมป์จำหน่ายของถึงข้าพเจ้า ท่านสามารถมอบหมายให้หัวหน้างานบัญชีหรือพนักงานบัญชีที่เกี่ยวข้องกับงานบัญชีในมหาวิทยาลัยของท่านตอบแบบสอบถามแทนท่านได้

ข้าพเจ้าได้ส่งจดหมายถึงท่านตามที่อยู่ของมหาวิทยาลัยที่ปรากฏในเวปไซต์ของสำนักงานคณะกรรมการการอุดมศึกษา ข้าพเจ้าหวังเป็นอย่างยิ่งว่าข้อมูลที่จะได้รับจะเป็นประโยชน์อย่างยิ่งต่อการศึกษาครั้งนี้ ข้าพเจ้าจะจัดส่งข้อสรุปที่ได้จากการศึกษานี้ให้กับท่านหลังจากงานวิจัยนี้เสร็จสมบูรณ์

โดยงานวิจัยนี้ศึกษาถึงปัจจัยที่มีอิทธิพลต่อการเปลี่ยนแปลงทางบัญชี เทคนิคทางบัญชี ความต้องการข้อมูลต้นทุน รวมทั้งเพื่อศึกษาปัญหาและอุปสรรคในการเปลี่ยนแปลงการจัดทำบัญชีในมหาวิทยาลัย ผลที่ได้จากการวิจัยดังกล่าว คาดว่าจะเป็นประโยชน์ต่อการพัฒนาระบบบัญชีของมหาวิทยาลัยในประเทศไทย และสะท้อนภาพรวมการเปลี่ยนแปลงทางบัญชีในด้านต่างๆ ที่เกิดขึ้นภายในมหาวิทยาลัย

งานวิจัยนี้จะมีการสำรวจ 78 มหาวิทยาลัยของรัฐในประเทศไทย ซึ่งประกอบด้วยมหาวิทยาลัยของรัฐและมหาวิทยาลัยในกำกับของรัฐ เพื่อขอความอนุเคราะห์ในการตอบแบบสอบถามงานวิจัยนี้

หากท่านยินดีที่จะให้ความอนุเคราะห์ในการตอบแบบสอบถามงานวิจัยนี้ ซึ่งใช้เวลาประมาณ 30 นาที กรุณาตอบแบบสอบถามและ
ส่งกลับถึงข้าพเจ้าโดยแนบใส่ซองจดหมายติดแสตมป์ที่เจ้าหน้าที่ของข้าพเจ้า ภายในวันที่ **[Date to be added]** ข้าพเจ้าจะไม่
ส่งแบบสอบถามให้ท่านอีกหากไม่ได้รับการตอบกลับแบบสอบถามจากท่านหลังจากที่ท่านได้รับ จดหมายฉบับนี้

ข้อมูลทั้งหมดที่ได้จากการวิจัยครั้งนี้ จะถูกเก็บในรูปแบบรายงานวิทยานิพนธ์ปริญาเอกและถูกตีพิมพ์เพื่อการศึกษา ข้อมูลทั้งหมด
จะถูกเก็บเป็นความลับ ทุกคำตอบของท่านจะถูกนำไปใช้ในลักษณะของตัวเลข โดยไม่สามารถระบุเจาะจงข้อมูลต่างๆและจะไม่
สามารถระบุได้ว่ามาจากองค์กรใด

หากท่านมีความประสงค์ต้องการข้อมูลเพิ่มเติม หรือหากมีข้อสงสัยประการใด ติดต่อข้าพเจ้าได้ที่เบอร์ 66-87-2347853 (ประเทศ
ไทย) หรือ 61-4-3463-1490 (ออสเตรเลีย) (E-mail: pupping@groupwise.swin.edu.au) หรือ ดร. จูดี โอลิเวอร์ ได้
ที่เบอร์ 61-3-9214-8985 (E-mail: juditholiver@groupwise.swin.edu.au)

ขอขอบพระคุณอย่างสูง ที่ท่านให้ความกรุณาพิจารณางานวิจัยนี้ ไม่ว่าท่านจะยินดีที่จะให้ความอนุเคราะห์ในการตอบแบบสอบถาม
งานวิจัยนี้หรือไม่

ขอแสดงความนับถือ

เพชรไพรวิน อูปปิง
นักศึกษาระดับปริญญาเอก

ดร. จูดี โอลิเวอร์
อาจารย์ที่ปรึกษา

งานวิจัยนี้ได้รับการรับรองจากคณะกรรมการด้านจรรยาบรรณงานวิจัยของมหาวิทยาลัย Swinburne หากท่าน
มีข้อสงสัยหรือต้องการร้องเรียนเกี่ยวกับงานวิจัยนี้ ท่านสามารถแจ้งมาได้ที่

Research Ethics Officer, Swinburne Research (H68),
Swinburne University of Technology, P O Box 218, Hawthorn, Melbourne, Victoria,
AUSTRALIA 3122.
Tel + 61 3 9214 5218
หรือ resethics@swin.edu.au

“โปรดเก็บข้อมูลนี้ไว้เพื่ออ้างอิงในอนาคต”

Appendix 8: President of RMUTI Support Letter

ที่ ศธ. ๐586(กบค)/ 2914



มหาวิทยาลัยเทคโนโลยีราชมงคลธัญบุรี
744 ถนนสุรนารายณ์
อ.เมือง จ.นครราชสีมา 30000

18 สิงหาคม 2552

เรื่อง ขอความอนุเคราะห์สนับสนุนข้อมูลเพื่องานวิจัย
เรียน

ด้วย นางสาวเพชรไพรวิน อุบปีง ตำแหน่ง ผู้ช่วยศาสตราจารย์ ระดับ 6 สังกัด มหาวิทยาลัยเทคโนโลยีราชมงคลธัญบุรี วิทยาเขตสกลนคร และปัจจุบันกำลังศึกษาต่อระดับปริญญาเอก ทางด้านบัญชี ณ Swinburne University of Technology ณ เมืองเมลเบิร์น ประเทศ ออสเตรเลีย กำลังทำวิทยานิพนธ์ภายใต้หัวข้อ “Accounting Change in Thai Public Universities” ซึ่งมีวัตถุประสงค์เพื่อศึกษาปัจจัยที่มีอิทธิพลต่อการเปลี่ยนแปลงทางบัญชี เทคนิคทางบัญชีที่นำมาใช้ในมหาวิทยาลัยภาครัฐ และมหาวิทยาลัยในกำกับของรัฐในเมืองไทย รวมทั้งเพื่อศึกษาปัญหาและอุปสรรคในการเปลี่ยนแปลงทางการบัญชีในมหาวิทยาลัย

ซึ่ง มหาวิทยาลัยเทคโนโลยีราชมงคลธัญบุรี พิจารณาแล้วเห็นว่า งานวิจัยดังกล่าวจะเป็นประโยชน์โดยตรงต่อการพัฒนาระบบบัญชีในมหาวิทยาลัยของรัฐในประเทศไทย ดังนั้น จึงขอความร่วมมือจากท่านในการให้ความอนุเคราะห์ตอบแบบสอบถาม หรืออนุญาตให้นางสาวเพชรไพรวิน อุบปีง เข้าพบเพื่อสัมภาษณ์ และขอข้อมูลจากท่าน ทั้งนี้ข้อมูลทั้งหมดจะเก็บไว้เป็นความลับ และใช้เพื่อการศึกษาค้นคว้าเท่านั้น ท่านสามารถติดต่อ โดยตรงกับ นางสาวเพชรไพรวิน อุบปีง ได้ทางโทรศัพท์หมายเลข 0 87 234 7853 หรือ อีเมลล์ phetphairin_u@hotmail.com

จึงเรียนมาเพื่อโปรดพิจารณา

(รศ.ดร. วินิจ ไชติสว่าง)

อธิการบดีมหาวิทยาลัยเทคโนโลยีราชมงคลธัญบุรี

Appendix 9: Survey Questionnaires

SURVEY

ACCOUNTING CHANGE IN THAI PUBLIC UNIVERSITIES

OVERVIEW

The purpose of this survey is to investigate accounting change in Thai public universities. It seeks information about factors that can be barriers to and facilitators of accounting change. It also seeks information about the cost accounting practices being used in Thai public universities. Currently there is little evidence in either the domestic or international literature of empirical case studies and surveys about the problems and difficulties met in accounting reform in the Thai public sector.

DEFINITIONS

Accounting Change

The development of new accounting techniques and practices in financial accounting, management accounting and auditing.

Accounting Technique

Techniques which support accounting change such as accrual-based accounting, activity-based costing and balanced scorecard.

Activity Based Costing (ABC)

A cost technique that assigns indirect costs to the specific activities performed in a service delivery process. The activity costs are then assigned to specific cost objects e.g. faculties, departments, students.

INSTRUCTIONS FOR COMPLETING THIS SURVEY

- 1 Please answer all the survey questions to the best of your ability.
- 2 We welcome any additional comments throughout the survey.
- 3 Please place the completed survey in the enclosed reply-paid envelope and return it at your earliest convenience.

www.swin.edu.au



Thank you for your supporting this

Phetphairin Upping, PhD Candidate :

PART 1: ACCOUNTING CHANGE IN THAI PUBLIC UNIVERSITIES

1. Has your university changed any of the following systems during the last ten years?

Systems	Yes 1	No 2	Intending to in future 3
1. Financial accounting system			
2. Budgetary system			
3. Cost accounting system			
4. Performance measurement system			
5. Auditing system			
6. Other (accounting/finance systems): please specify.....			

2. If your university has or intends to change any accounting systems, at what stage is the change process currently at

Systems	Planning stage 1	Implementation stage 2	Completed stage 3
1. Financial accounting system			
2. Budgetary system			
3. Cost accounting system			
4. Performance measurement system			
5. Auditing system			
6. Other (accounting/finance systems): please specify.....			

3. Please rate the importance of changes made or intended to be made to the following systems to support your university's information needs.

Factors	Unimportant 1	Of little Importance 2	Moderately Important 3	Important 4	Very Important 5
1. Financial accounting system					
2. Budgetary system					
3. Cost accounting system					
4. Performance measurement system					
5. Auditing system					
6. Other: please specify.....					

4. Please rate the importance of the following techniques to support the accounting changes at your university.

Factors	Unimportant 1	Of little Importance 2	Moderately Important 3	Important 4	Very Important 5
1. Accrual accounting					
2. Performance-based budgeting					
3. Block grant budgeting					
4. Activity-based Costing					
5. Balanced Scorecard					
6. Key Performance Indicators					
7. Internal auditing					
8. External auditing					
9. Other: please specify.....					

5. Please rate the importance of the following resources to support accounting change at your university.

Factors	Unimportant 1	Of little Importance 2	Moderately Important 3	Important 4	Very Important 5
1. Training courses by the Comptroller General's Department					
2. Training courses by the Ministry of Education					
3. Training courses within the university					
4. Professional publications					
5. Seminars/conferences					
6. Government publications					
7. Auditors/consultants					
8. Networking with other universities, government bodies, professional organisations					
9. The world wide web (internet)					
10. Staff feedback					
11. Other: please specify.....					

6. Please rate the importance of the following to monitor the accounting change at your university.

Factors	Unimportant 1	Of little Importance 2	Moderately Important 3	Important 4	Very Important 5
1. Internal auditors					
2. External auditors					
3. Internal consultants					
4. External consultants					
5. Regular progress reports by project team					
6. User feedback					
7. Budget reviews					
8. Benchmarking with other universities					
9. In-house project team					
10. Formal reviews by university					
11. Other: please specify.....					

7. Please indicate the level of success achieved by your university in relation to the changes made to the following systems.

Factors	No change made 1	Unable to assess at this stage 2	Unsuccessful 3	Successful 4
1. Financial accounting system				
2. Budgetary system				
3. Cost accounting system				
4. Performance measurement system				
5. Auditing system				
6. Other: please specify.....				

**PART 2: FACTORS INFLUENCING ACCOUNTING CHANGE
IN THAI PUBLIC UNIVERSITIES**

1. External factors:

In your opinion how important are/were the following factors in influencing the accounting change at your university.

Factors	Unimportant 1	Of little importance 2	Moderately Important 3	Important 4	Very Important 5
1. The 1997 Thai economic crisis					
2. Government law					
3. Public pressure for Thailand to have world class universities					
4. Availability of new computer technology to upgrade existing accounting system					
5. Government requirement for public agencies to be more efficient and to provide services based on value for money					
6. Government requirement for a more transparent and accountable public sector					
7. Requirement to meet revised rules imposed by government in relation to university funding					
8. To adopt the new accounting system imposed by the Comptroller General's Department					
9. To adapt the university's accounting system in line with the requirements of the Office of Higher Education Commission under the Ministry of Education (three-dimension accounting initiative)					
10. Requirement by The Thai government for public agencies to report unit cost					
11. Other: please specify					
.....					
.....					
.....					

In your opinion, what are *the top 3 external factors* influencing accounting change?

.....

.....

.....

.....

.....

2. Internal factors:

In your opinion how important are/were the following factors in influencing the accounting change at your university.

Factors	Unimportant 1	Of little Importance 2	Moderately Important 3	Important 4	Very Important 5
1. Need for tighter financial management due to less government funding					
2. The desire to become an autonomous university					
3. To update the accounting system as it was not able to meet the information needs of internal users					
4. To update the accounting system as it was not able to meet the information needs of external users					
5. Desire to keep up with the latest innovations in performance measurement					
6. Requirement for tighter control of university expenditure					
7. Top management of university (president and university committee) wanting upgraded systems					
8. The need for cost information for performance measurement initiatives					
9. Request from the Deans for cost information					
10. Request from Heads of Schools for cost information					
11. Request from Heads of Administrative Departments for cost information					
12. Lack of decision-relevant cost information from the accounting system					
13. To provide improved financial information for university strategic planning					
14. To provide improved information for preparing university budgets					
15. To provide information for those within the university for operational (day-to-day) decision-making					
16. Other: please specify					
.....					
.....					
.....					

In your opinion, what are *the top 3 internal factors* influencing accounting change?

.....

.....

.....

.....

.....

PART 3: BARRIERS TO AND FACILITATORS OF SUCCESS OF ACCOUNTING CHANGE

1. In your opinion how important were the following as barriers to the implementation of accounting change at your university.

Factors	Unimportant 1	Of little Importance 2	Moderately Important 3	Important 4	Very Important 5
1. Lack of government law to impose accounting change					
2. Lack of commitment by top management of university (president and university committee)					
3. Lack of involvement by the Office of Higher Education Commission under Ministry of Education					
4. Lack of support by the Comptroller General's Department					
5. Lack of involvement by professional accounting bodies					
6. Lack of internal staff to monitor the change process					
7. Lack of external consultant					
8. Accounting staff shortage					
9. Lack of accounting staff involvement					
10. Lack of accounting staff with knowledge of private sector accounting					
11. Not enough full-time staff					
12. Accounting change given lower priority than other initiatives being undertaken by the university					
13. Resistance to accounting change by employees who preferred the existing accounting system					
14. High cost of implementation					
15. Inappropriate software packages					
16. Difficulty in designing a new financial system					
17. Current technology not able to cope with new requirement					
18. Lack of adequate computing resources					
19. Lack of expertise in information systems					
20. High cost for external consultant					
21. Lack of understanding and knowledge of data requirements					
22. Lack of understanding of how to collect data					
23. Culture and mind-set of employees working within university					
24. Lack of autonomy from the government					
25. Lack of a planned training program for employees					
26. Lack of a project plan to guide the implementation					
27. Other: please specify.....					

In your opinion, what are *the top 3 barriers* affecting accounting change?

.....

.....

.....

.....

.....

.....

2. In your opinion please indicate how important the following factors were in *supporting* the accounting change at your university.

Factors	Unimportant 1	Of little Importance 2	Moderately Important 3	Important 4	Very Important 5
1. Strong force of government law to impose public accounting change					
2. Commitment by top management of university (president and university committee)					
3. High level of involvement by The Office of Higher Education Commission under Ministry of Education					
4. Strong support by The Comptroller General's Department					
5. Support from the accounting professional bodies					
6. Adequate number of internal staff to support the change process					
7. Employment of external consultant					
8. Adequate number of full-time accounting staff					
9. Accounting staff involvement and commitment					
10. Adequate number of accountants with knowledge of private sector accounting					
11. Adequate number of full-time staff					
12. High priority given to accounting change					
13. No resistance to accounting change by employees					
14. University resources committed to change process					
15. Appropriate software packages					
16. Adequate resources for designing new system					
17. Technology able to cope with new requirements					
18. Adequate computing resources					
19. Adequate level of staff with knowledge of information systems					
20. Resources available in budget for consultant					
21. Understanding and knowledge of data requirements					
22. Understanding of how to collect data					

Factors	Unimportant 1	Of little Importance 2	Moderately Important 3	Important 4	Very Important 5
23. Necessary culture and mind-set within the university to support change					
24. Autonomy from the government					
25. Well planned training program for staff					
26. Well documented project plan to guide the implementation					
27. Other: please specify.....					

In your opinion, what are *the top 3 facilitators* to support accounting change

.....
.....
.....
.....
.....
.....

PART 4: COST INFORMATION AND COST TECHNIQUES IN USE IN THAI PUBLIC UNIVERSITIES

1. Please rate your level of agreement as to whether your university’s current financial system provides enough data for cost management purposes.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5
<input type="checkbox"/>				

2. If your university has moved from cash to accrual accounting system, in which year did this occur?

- Before 2001
- After 2001
- Have not changed
- Currently in the process of changing

3. Please indicate in your opinion how important the following factors were in creating the need for cost information at your university.

Factors	Unimportant 1	Of little Importance 2	Moderately Important 3	Important 4	Very Important 5
3.1 External factors					
1. Government policy requiring every public agency to report unit cost (such as the Royal Decree No.21)					
2. Opportunity for university to receive the government bonus reward system which encourages university’s to collect cost information (evaluated by the Public Development Commission :PDC office)					
3. Information required for reporting to government on budget matters					
4. Other: please specify.....					
3.2 Internal factors					
1. To support budget allocation					
2. To support the university’s strategic planning					
3. To support performance measurement initiatives within the university					
4. To support the university’s decision making					
5. To meet the cost information needs of various users within the university (e.g. Deans, Heads of Schools, Heads of Administrative Departments)					
6. Other: please specify.....					

4. Please indicate in your opinion the importance of each type of cost information for decision-making at your university.

Factors	Unimportant 1	Of little Importance 2	Moderately Important 3	Important 4	Very Important 5
1. University-wide costs					
2. Campus operating costs					
3. Faculty operating costs					
4. Department operating costs					
5. Cost of individual courses					
6. Unit of study costs					
7. Student costs per faculty					
8. Research grant costs					
9. University operational costs					
10. Activity-based costs for university, faculty and school					
11. International fee-paying post-graduate student costs					
12. International fee-paying undergraduate student costs					
13. Local fee paying post-graduate students costs					
14. Local fee paying undergraduate students costs					
15. Other: please specify.....					

5. Does your university currently produce reports containing the following cost detail?

Type of cost	Yes	No	Intend to in the future
1. University-wide costs			
2. Campus operating costs			
3. Faculty operating costs			
4. Department operating costs			
5. Cost of individual courses			
6. Unit of study costs			
7. Student costs per faculty			
8. Research grant costs			
9. University operational costs			
10. Activity-based costs for university, faculty and school			
11. International fee-paying post-graduate student costs			
12. International fee-paying undergraduate student costs			
13. Local fee paying post-graduate students costs			
14. Local fee paying undergraduate students costs			
15. Other: please specify.....			

6. Which of the following software packages does your university use for its financial management? (Please tick more than one if appropriate.)

- Vision Net
- Solution
- INNOVA
- Oracle Corp
- SAP
- PeopleSoft
- Bann Quimica
- J. D. Edward
- Soft Square 1999
- Internally developed software
- Other (Please specify.....)

Cost reporting

7. In your opinion how important are the following authorities/people in requiring your university to prepare cost reports?

Factors	Unimportant 1	Of little Importance 2	Moderately Important 3	Important 4	Very Important 5
1. The Comptroller General's Department					
2. The Bureau of Budget					
3. The Public Development Commission Office (PDC)					
4. The Office of Higher Education Commission under the Ministry of Education					
5. The Office for National Education Standards and Quality Assessment (Public Organisation) ONESQA					
6. The President and University committee					
7. The Deans					
8. The Heads of School					
9. The Heads of Administrative departments					
10. Other: please specify.....					

8. When did your university start producing *external cost* reports (e.g. to government)?

- Before 2003
- After 2003
- Do not report cost information to government
- Developing cost report

9. When did your university start producing *internal cost* reports (e.g. to Dean, Head of School)?

- Before 2003
- After 2003
- Do not prepare cost reports for internal users
- Developing cost reports

10. Do you use the same costing system for the preparation of cost reports to those within the university and external parties?

- Yes
- No

If your answer is No, how does your university meet the different cost information needs?

.....

11. If your university is required to prepare the unit cost report in line with the Royal Decree 21 at what stage are you at?

- Planning stage
- Implementation stage
- Completed and producing report
- Not required to produce report

12. If you are still in the process of developing the unit cost reports in line with Royal Decree 21, how important have the following factors been in its development?

Factors	Unimportant 1	Of little Importance 2	Moderately Important 3	Important 4	Very Important 5
1. Change from cash to accrual accounting not yet completed					
2. The government Fiscal Management Information System (GFMIS) not yet completed					
3. Accounting system for Thai universities (Three dimension accounting) not yet completed					
4. Difficulty to define cost objects/pools for the cost accounting system					
5. Lack of time and resources to collect cost data					
6. Difficulty in collecting cost data					
7. Difficulty in identification of appropriate cost driver					
8. Lack of government funds to implement costing system					
9. Lack of commitment by top management of university (president and university committee)					
10. The absence of a uniform costing report for government					
11. The absence of a uniform costing report for university use					
12. Lack of understanding of cost processes by staff					
13. Accounting staff lack experience in costing methodology					
14. Lack of internal training team					
15. Lack of external accounting consultant					
16. Lack of external IT system consultant					
17. Lack of internal commitment of organisational members to produce cost information					
18. Other: please specify.....					

Cost method

13. Has your university adopted Activity-based costing (ABC) to support the development and reporting of cost information?

- Yes (go to question 14)
- Yes but the university has abandoned ABC (go to question 15)
- No (go to question 24)
- No, but plan to adopt in future (go to question 24)

14. If your university has adopted ABC, at which of the following stages is your implementation of ABC? (please tick one box only)

- Planning and design stage of the ABC project
- Investing/developing the infrastructure needed to facilitate change and support ABC
- Developing and installing ABC, as well as training employees
- Implementing ABC as a pilot project
- Full implementation of ABC
- Using ABC as a part of daily practices
- Now seamlessly integrated with other organisational systems (go to question 16)

15. If your university has adopted ABC in the past, but has now abandoned it at what stage did the implementation of ABC stop? (please tick one box only)

- Planning and design stage of the ABC project
- Investing/developing the infrastructure needed to facilitate change and support ABC
- Developing and installing ABC, as well as training employees
- Implementing ABC as a pilot project
- Full implementation of ABC
- Using ABC as a part of daily practices
- When seamlessly integrated with other organisational systems

16. Please rate how important the following authorities/people were in the decision for your university to adopt ABC.

Factors	Unimportant 1	Of little Importance 2	Moderately Important 3	Important 4	Very Important 5
16.1 External organisation					
1. The Comptroller General's Department					
2. The Office of Higher Education Commission under Ministry of Education					
3. The Bureau of Budget					
4. Other: please specify.....					
16.2 Internal organisation					
1. The President and University Committee					
2. The Deans					
3. The Heads of School					
4. The Heads of Administrative Departments					
5. Other: please specify.....					

17. Has your university used ABC for the whole university at one time or in selected divisions/department? (*Able to tick more than one*)

- The whole organisation
- In selected campus
- In selected faculties/divisions
- In selected departments
- Other (please specify.....)

18. Please rate the level of success of the ABC implementation in your university.

- Unsuccessful
- Successful
- Unable to assess at this stage

In your opinion what are *the top 3 factors* which led to your answer above regarding the success or lack of success of the ABC implementation

.....

.....

.....

19. Please rate your level of agreement with the following statements in relation to the ABC implementation at your university.

Factors	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
1. ABC initiative has the strong active support of top management (President and University Committee)					
2. The objectives of the ABC implementation were not clearly understood by users					
3. Sufficient training about the design and objectives of ABC is being provided					
4. Compensation systems in the university are designed to motivate employees to implement ABC					
5. Adequate resources are available for the ABC implementation					
6. Strong support for the ABC implementation given by the Comptroller General's Department					
7. Strong support for the ABC implementation given by The Ministry of Education					
8. Strong support for the ABC implementation given by University staff					
9. Other: please specify.....					
.....					
.....					
.....					

ABC benefit

20. Please rate your level of agreement with the following statements in relation to the **expected** benefits from implementing ABC.

Factors	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
1. More accurate cost information					
2. Improved cost information for performance measurement					
3. Improved budgeting process due to the ability to identify the cost/performance relationship of different service levels					
4. Improved decision-making					
5. Improved cost control					
6. Ability to meet government reporting requirement for unit cost data (Royal Decree 21)					
7. Other: please specify.....					

21. Please rate your level of agreement with the following statements in relation to the **actual** benefits from implementing ABC.

Factors	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
1. More accurate cost information					
2. Improved cost information for performance measurement					
3. Improved budgeting by identifying the cost/performance relationship of different service levels					
4. Improved cost information for decision-making					
5. Improved cost control					
6. Ability to meet government reporting requirement for unit cost (Royal Decree 21)					
7. Other: please specify.....					

22. Please indicate whether you consider the ABC implementation has achieved the objectives set by your university.

- Fell short of expectations
- Met expectations
- Exceeded expectations
- Unable to assess at this stage

In your opinion what are **the top 3 factors** leading to your answer above.

.....

ABC problem

23. Please rate your level of agreement as to whether the following factors were problems during the implementation of ABC.

Factors	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
1. Lack of top management(president and university committee) commitment to ABC implementation					
2. Lack of government support					
3. Lack of a clearly defined plan for ABC implementation					
4. Lack of clear understanding by employees in the initial stage of ABC implementation					
5. Lack of accounting staff support					
6. Lack of appropriate software support					
7. High cost of implementing ABC					
8. Time taken to collect data					
9. Difficulty in gathering data on cost drivers					
10. Difficulty in defining cost drivers					
11. Difficulty in identifying university activities					
12. Difficulty in integrating ABC with current accounting system					
13. Shortcomings at the planning and design stages of the ABC project					
14. Too costly to get cost information					
15. Lack of external consultants					
16. Other: please specify.....					

24. If your university has **not** adopted ABC, please rate your level of agreement as to whether the following factors were a reason in the non-adoption.

Factors	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
1. The current costing system provides enough cost information					
2. Top management of university (president and university committee) not imposing the implementation of ABC					
3. Lack of government budgeting support					
4. Difficulty in collecting cost data					
5. Costly to use ABC					
6. Difficulty in selecting appropriate software package					
7. Lack of expertise to implement ABC within university					
8. Lack of external consultant					
9. University makes use of a cost methodology other than ABC					
10. Others: please specify.....					

If your university uses a cost methodology other than ABC, please explain its characteristics,
.....
.....
.....

PART 5: GENERAL INFORMATION

PART 5.1: CURRENT CHARACTERISTICS OF YOUR UNIVERSITY

- 1. What type is your university?
 - Non autonomous public university
 - In the process of becoming autonomous public university
 - Autonomous public university

- 2. How many campuses do you have in your university?
 - Less than 5 campuses
 - 5 – 11 campuses
 - More than 12 campuses

- 3. How old is your university?
 - Less than 10 years
 - 11 - 20 years
 - 21 - 30 years
 - 31 – 50 years
 - More than 50 years

- 4. Please indicate the number of students in your university
 - Less than 2000
 - 2000-5000
 - 5001-10000
 - 10001-20000
 - More than 20000

PART 5.2 DEMOGRAPHY

- 5. How long have you worked in the university sector?
 - Less than 5 years
 - 5-10 years
 - 11-20 years
 - More than 20 years

Please provide any additional comments regarding accounting change in Thai public universities.
.....
.....
.....
.....

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

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Appendix 10: Survey Questionnaires (Thai version)

แบบสอบถาม

การเปลี่ยนแปลงทางบัญชีในสถาบันอุดมศึกษา

แบบสอบถามนี้เป็นการสำรวจเกี่ยวกับการเปลี่ยนแปลงทางบัญชีในมหาวิทยาลัยของรัฐ ปัจจุบันที่มีอิทธิพลต่อการเปลี่ยนแปลงทางบัญชีรวมทั้งปัญหาอุปสรรค และสิ่งที่จะอำนวยความสะดวกให้การเปลี่ยนแปลงทางบัญชีประสบความสำเร็จ นอกจากนี้แบบสอบถามนี้ยังได้สำรวจเทคนิคทางบัญชีต้นทุน และข้อมูลต้นทุนที่มหาวิทยาลัยต้องการ การวิจัยการเปลี่ยนแปลงทางบัญชีครั้งนี้เป็นการวิจัยการเปลี่ยนแปลงทางบัญชีครั้งแรกในสถาบันอุดมศึกษาในประเทศไทย

คำจำกัดความ

การเปลี่ยนแปลงทางบัญชี หมายถึง การพัฒนาเทคนิค และการปฏิบัติทางบัญชีในการเปลี่ยนแปลงทางการเงิน การเปลี่ยนแปลงทางการบัญชีบริหาร เช่น ต้นทุน งบประมาณ การวัดผลการดำเนินงาน และการเปลี่ยนแปลงการตรวจสอบทางบัญชี

เทคนิคทางบัญชี หมายถึง เทคนิคซึ่งช่วยสนับสนุนการเปลี่ยนแปลงทางบัญชี เช่น การเปลี่ยนแปลงจากเกณฑ์เงินสดไปเป็นเกณฑ์คงค้าง การเปลี่ยนแปลงเทคนิคในการบัญชีบริหาร เช่น การเปลี่ยนแปลงระบบต้นทุนเดิมไปเป็นระบบต้นทุนกิจกรรม การเปลี่ยนแปลงการวัดผลการปฏิบัติงานแบบ 4 มุมมอง (Balanced scorecard)

ต้นทุนกิจกรรม (ABC) หมายถึง เทคนิคในการคำนวณต้นทุนโดยจัดสรรต้นทุนทางอ้อมตามเกณฑ์กิจกรรมตามวัตถุประสงค์ของต้นทุน เช่น แบ่งต้นทุนทางอ้อมไปยังคณะ สาขาวิชา หรือ ต้นทุนของนักศึกษา เป็นต้น

คำชี้แจงในการตอบแบบสอบถาม

- โปรดตอบแบบสอบถามให้ครบทุกข้อ
- หากท่านมีความคิดเห็นใด ๆ ที่จะเป็นประโยชน์ต่องานวิจัย โปรดเขียนรายละเอียดไว้ด้านหลังแบบสอบถามที่ได้จัดเตรียมเนื้อที่ให้ไว้ให้ท่านหรือเขียนรายละเอียดในแต่ละข้อที่ได้จัดเตรียมเนื้อที่ให้ไว้ให้ท่าน
- โปรดส่งคืนแบบสอบถามทางไปรษณีย์โดยใส่ซองที่แนบมาพร้อมนี้

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ขอบคุณทุกท่านที่ให้การสนับสนุนงานวิจัยครั้งนี้

เพชรไพรริน อูบปิง

ส่วนที่ 1: การเปลี่ยนแปลงทางบัญชีในสถาบันอุดมศึกษา

1. มหาวิทยาลัยของท่านมีการเปลี่ยนแปลงระบบบัญชีใด ๆ ในช่วง 10 ปีที่ผ่านมาหรือไม่

ปัจจัย	มีการเปลี่ยนแปลง	ไม่มีการเปลี่ยนแปลง	มีแผนการเปลี่ยนแปลงในอนาคต
	1	2	3
1. การเปลี่ยนแปลงระบบบัญชีการเงิน			
2. การเปลี่ยนแปลงระบบงบประมาณ			
3. การเปลี่ยนแปลงระบบต้นทุน			
4. การเปลี่ยนแปลงระบบการประเมินผลการปฏิบัติงาน			
5. การเปลี่ยนแปลงระบบการตรวจสอบ(Auditing system)			
6. การเปลี่ยนแปลงระบบอื่น ๆ โปรดระบุ.....			

2. ถ้ามหาวิทยาลัยของท่านมีการเปลี่ยนแปลงหรือมีแผนการเปลี่ยนแปลงในอนาคต มหาวิทยาลัยของท่านอยู่ในขั้นตอนใดของการเปลี่ยนแปลงระบบบัญชี

ปัจจัย	ขั้นวางแผน	ขั้นดำเนินงาน	ขั้นเสร็จสมบูรณ์
	1	2	3
1. การเปลี่ยนแปลงระบบบัญชีการเงิน			
2. การเปลี่ยนแปลงระบบงบประมาณ			
3. การเปลี่ยนแปลงระบบต้นทุน			
4. การเปลี่ยนแปลงระบบการประเมินผลการปฏิบัติงาน			
5. การเปลี่ยนแปลงระบบการตรวจสอบ(Auditing system)			
6. การเปลี่ยนแปลงระบบอื่น ๆ โปรดระบุ.....			

3. ให้ท่านระบุระดับความสำคัญของการเปลี่ยนแปลงทางการบัญชีต่อไปนี้ว่ามีความสำคัญอย่างไร

ปัจจัย	ไม่สำคัญ	น้อย	ปานกลาง	มาก	มากที่สุด
	1	2	3	4	5
1. การเปลี่ยนแปลงระบบบัญชีการเงิน					
2. การเปลี่ยนแปลงระบบงบประมาณ					
3. การเปลี่ยนแปลงระบบต้นทุน					
4. การเปลี่ยนแปลงระบบการประเมินผลการปฏิบัติงาน					
5. การเปลี่ยนแปลงระบบการตรวจสอบ(Auditing system)					
6. การเปลี่ยนแปลงระบบอื่น ๆ โปรดระบุ.....					

4. ให้ท่านระบุว่าเทคนิคทางการบัญชีเหล่านี้มีความสำคัญอย่างไรในการสนับสนุนการเปลี่ยนแปลงระบบบัญชีข้างต้น ในข้อ 2

Factors	ไม่สำคัญ 1	น้อย 2	ปานกลาง 3	มาก 4	มากที่สุด 5
1. ระบบบัญชีเกณฑ์คงค้าง (Accrual accounting)					
2. ระบบงบประมาณแบบมุ่งเน้นผลงาน (Result based budgeting)					
3. ระบบงบประมาณเป็นเงินก้อน หรือวงเงินรวม (Block grant budgeting)					
4. ระบบต้นทุนกิจกรรม (activity based costing)					
5. มุมมองการวัดผลการปฏิบัติงาน 4 ด้าน (Balanced Scorecard)					
6. ตัวชี้วัดผลลัพธ์การวัดผลปฏิบัติงาน (KPI)					
7. การตรวจสอบภายใน					
8. การตรวจสอบภายนอก					
9. อื่น ๆ โปรดระบุ.....					
.....					
.....					

5. ในความคิดเห็นของท่าน การส่งเสริมกระบวนการเปลี่ยนแปลงทางบัญชีต่อไปนี้มีความสำคัญต่อมหาวิทยาลัยของท่านอย่างไร

ปัจจัย	ไม่สำคัญ 1	น้อย 2	ปานกลาง 3	มาก 4	มากที่สุด 5
1. การฝึกอบรมจัดโดยกรมบัญชีกลาง					
2. การฝึกอบรมจัดโดยสำนักงานคณะกรรมการการอุดมศึกษา					
3. การฝึกอบรมภายในมหาวิทยาลัย					
4. เอกสารเผยแพร่จากหน่วยงานทางบัญชี					
5. การประชุมสัมมนา					
6. เอกสารเผยแพร่จากรัฐบาล					
7. มีผู้ตรวจสอบหรือที่ปรึกษา Auditors/consultants					
8. มีเครือข่ายระหว่างหน่วยงานของรัฐบาล					
9. ระบบบริหารข้อมูลทางอินเทอร์เน็ต					
10. รับฟังความคิดเห็นของพนักงาน					
11. อื่น ๆ โปรดระบุ.....					
.....					
.....					

6. ถ้ามหาวิทยาลัยของท่านมีการวัดผลของการเปลี่ยนแปลงทางบัญชี ระบบการวัดผลเหล่านี้มีความสำคัญอย่างไร

ปัจจัย	ไม่สำคัญ 1	น้อย 2	ปานกลาง 3	มาก 4	มากที่สุด 5
1. การตรวจสอบภายใน					
2. การตรวจสอบภายนอก					
3. การมีที่ปรึกษาภายใน					
4. การมีที่ปรึกษาภายนอก					
5. การทบทวนโดยจัดทำรายงานความก้าวหน้า					
6. ความคิดเห็นของผู้ใช้					
7. ทบทวนระบบงบประมาณ					
8. การเปรียบเทียบกับองค์กรที่ประสบความสำเร็จ					
9. ทีมงานภายใน					
10. การทบทวนการทำงานอย่างเป็นทางการโดยมหาวิทยาลัย					
11. อื่น ๆ โปรดระบุ.....					

7. ในความคิดเห็นของท่าน ท่านคิดว่าการเปลี่ยนแปลงระบบบัญชีในมหาวิทยาลัยของท่านประสบความสำเร็จอย่างไร

ปัจจัย	ไม่มีการ เปลี่ยนแปลง 1	ไม่สามารถ ประเมินได้ 2	ไม่ประสบ ความสำเร็จ 3	ประสบ ความสำเร็จ 5
1. ระบบบัญชีการเงิน				
2. ระบบงบประมาณ				
3. ระบบบัญชีต้นทุน				
4. ระบบการวัดผลการปฏิบัติงาน				
5. ระบบการตรวจสอบ				
6. อื่น ๆ โปรดระบุ.....				

ส่วนที่ 2: ปัจจัยที่มีอิทธิพลต่อการเปลี่ยนแปลงทางบัญชีในสถาบันอุดมศึกษา

1. ท่านคิดว่าปัจจัยใดมีอิทธิพลในการเปลี่ยนแปลงทางบัญชีในสถาบันอุดมศึกษา

ปัจจัยภายนอก

ให้ท่านระบุระดับความสำคัญของปัจจัยต่อไปนี้ในความคิดเห็นของท่านว่าแต่ละปัจจัยมีความสำคัญต่อการทำให้เกิดการเปลี่ยนแปลงทางบัญชีมากน้อยเพียงใด

ปัจจัย	ไม่สำคัญ 1	น้อย 2	ปานกลาง 3	มาก 4	มากที่สุด 5
1. วิถีคิดทางเศรษฐกิจของประเทศไทยในปี 2547 นำไปสู่ความจำเป็นสำหรับปรับปรุงระบบการบริหารการเงิน ของประเทศ					
2. การออกกฎหมายของรัฐบาล เช่น พระราชกฤษฎีกาการบริหารจัดการบ้านเมืองที่ดี นำไปสู่การปรับปรุงระบบการบริหารการเงินของประเทศ					
3. ความกดดันจากรัฐบาลในการเน้นคุณภาพในการจัดการศึกษา เช่น การเน้นความเป็นมหาวิทยาลัยอันดับหนึ่ง และได้มาตรฐานสากล					
4. บทบาทของเทคโนโลยีคอมพิวเตอร์นำไปสู่การพัฒนาระบบการเงินอิเล็กทรอนิกส์					
5. รูปแบบของการบริหารภาครัฐสมัยใหม่ เช่น แนวคิดเกี่ยวกับประสิทธิภาพ ประสิทธิผล ความคุ้มค่าของเงินและต้นทุน ประสิทธิภาพ					
6. แนวคิดเกี่ยวกับการกำกับดูแลที่ดี การส่งเสริมความรับผิดชอบต่อสังคม ความโปร่งใส และ ความยุติธรรม					
7. การเปลี่ยนแปลงนโยบายของรัฐบาลในการจัดสรรงบประมาณให้กับมหาวิทยาลัย					
8. การออกแบบระบบบัญชีโดยกรมบัญชีกลาง					
9. การออกแบบระบบบัญชีโดยสำนักงานคณะกรรมการการอุดมศึกษา หรือระบบบัญชีตามมิติ					
10. ความต้องการของรัฐบาลเพื่อให้หน่วยงานของรัฐรายงานต้นทุนต่อหน่วย					
11. ปัจจัยอื่น ๆ					

โปรดระบุ 3 ปัจจัยภายนอกที่ท่านคิดว่ามีอิทธิพลต่อการเปลี่ยนแปลงทางบัญชีในมหาวิทยาลัยของท่านมากที่สุด

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ปัจจัยภายใน

ให้ท่านระบุระดับความสำคัญของปัจจัยต่อไปนี้ในความคิดเห็นของท่านว่าแต่ละปัจจัยมีความสำคัญต่อการทำให้เกิดการเปลี่ยนแปลงทางบัญชีมากน้อยเพียงใด

ปัจจัย	ไม่สำคัญ 1	น้อย 2	ปานกลาง 3	มาก 4	มากที่สุด 5
1. ความจำเป็นที่จะต้องปรับตัวกับความกดดันจากการเปลี่ยนแปลงระบบการจัดสรรงบประมาณ					
2. ความต้องการที่จะเปลี่ยนสภาพเป็นมหาวิทยาลัยในกำกับของรัฐ					
3. ระบบบัญชีเดิมไม่สามารถรายงานข้อมูลตามความต้องการของหน่วยงานภายในได้					
4. ระบบบัญชีเดิมไม่สามารถรายงานข้อมูลตามความต้องการของหน่วยงานภายนอกได้					
5. การเปลี่ยนแปลงตามความต้องการเพื่อให้สอดคล้องกับแนวคิดในการวัดผลการปฏิบัติงานสมัยใหม่					
6. ความต้องการข้อมูลต้นทุนเพื่อใช้ในการควบคุมค่าใช้จ่ายในกรมมหาวิทยาลัย					
7. ผู้บริหารระดับสูงของมหาวิทยาลัยมีนโยบายในการเปลี่ยนแปลงระบบใหม่					
8. ความต้องการข้อมูลต้นทุนเพื่อใช้ในการวัดผลการปฏิบัติงานของมหาวิทยาลัย					
9. ความต้องการข้อมูลต้นทุนของคณบดี					
10. ความต้องการข้อมูลต้นทุนของหัวหน้าภาควิชาหรือ สาขาวิชา					
11. ความต้องการข้อมูลต้นทุนของหัวหน้างานฝ่ายสนับสนุนการศึกษา					
12. ความไม่เพียงพอของข้อมูลต้นทุนในการตัดสินใจจากระบบบัญชีเดิม					
13. ระบบบัญชีเดิมไม่ได้ให้ข้อมูลต้นทุนที่เกี่ยวข้องกับการวางแผนกลยุทธ์					
14. ระบบบัญชีเดิมไม่ได้ให้ข้อมูลต้นทุนที่เกี่ยวข้องกับระบบงบประมาณของมหาวิทยาลัย					
15. ระบบบัญชีเดิมไม่ได้ให้ข้อมูลในการบริหารงานของมหาวิทยาลัยที่เกี่ยวข้องกับการตัดสินใจ					
16. อื่น ๆ.....					

โปรดระบุ 3 ปัจจัยภายในที่ท่านคิดว่ามีอิทธิพลต่อการเปลี่ยนแปลงทางบัญชีในมหาวิทยาลัยของท่านมากที่สุด

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ส่วนที่ 3: ปัจจัยที่เป็นอุปสรรคและปัจจัยที่อำนวยความสะดวกในการเปลี่ยนแปลงทางบัญชี

1. ในความคิดเห็นของท่าน ปัจจัยเหล่านี้เป็นอุปสรรคต่อความสำเร็จในการเปลี่ยนแปลงทางการบัญชีในมหาวิทยาลัยของท่านอย่างไร

ปัจจัย	ไม่สำคัญ	น้อย	ปานกลาง	มาก	มากที่สุด
	1	2	3	4	5
1. ขาดข้อบังคับทางกฎหมายเกี่ยวกับบัญชีให้ปฏิบัติตาม					
2. ขาดการสนับสนุนจากผู้บริหารระดับสูงของมหาวิทยาลัย					
3. ขาดการสนับสนุนจากคณาจารย์คณะกรรมการอุดมศึกษา					
4. ขาดการสนับสนุนจากกรมบัญชีกลาง					
5. ขาดการร่วมมือกับหน่วยงานมาตรฐานการบัญชีภาครัฐ					
6. ขาดแคลนทีมงานที่ปรึกษาภายในมหาวิทยาลัย					
7. ขาดแคลนทีมงานที่ปรึกษานอกมหาวิทยาลัย					
8. ขาดแคลนพนักงานทางบัญชี					
9. ขาดพนักงานบัญชีที่เกี่ยวข้องในการเข้ามามีส่วนร่วม					
10. ขาดแคลนพนักงานที่มีความรู้ทางบัญชีภาคเอกชน					
11. พนักงานบัญชีประจำไม่เพียงพอ					
12. มีการเปลี่ยนแปลงอย่างอื่นที่สำคัญกว่าการเปลี่ยนแปลงทางการบัญชี					
13. มีการต่อต้านการเปลี่ยนแปลงทางบัญชีโดยพนักงานที่พอใจกับระบบบัญชีเดิม					
14. ใช้ต้นทุนสูงมากในการเปลี่ยนแปลงทางบัญชี					
15. ความไม่เหมาะสมของฮาร์ดแวร์ทางบัญชี					
16. ความยากในการออกแบบระบบบัญชีใหม่					
17. ความล้มเหลวของระบบสารสนเทศ					
18. ความไม่เพียงพอของจำนวนคอมพิวเตอร์					
19. ความไม่เพียงพอของผู้เชี่ยวชาญทางด้านเทคโนโลยีสารสนเทศ					
20. ใช้ต้นทุนสูงมากในการจ้างที่ปรึกษา					
21. ความเข้าใจเกี่ยวกับข้อมูลที่ความต้องการ					
22. ความเข้าใจเกี่ยวกับการเก็บรวบรวมข้อมูล					
23. การเปลี่ยนแปลงวัฒนธรรมในการทำงานของมหาวิทยาลัย					
24. ขาดการบริหารงานอิสระจากภาครัฐ					
25. ไม่มีแผนการฝึกอบรมอย่างต่อเนื่อง					
26. ไม่มีเอกสารโครงการที่จะแนะนำระบบการเปลี่ยนแปลงทางบัญชี					
27. อื่น ๆ					
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โปรดระบุ 3 ปัจจัยที่ท่านคิดว่าเป็นอุปสรรคต่อความสำเร็จในการเปลี่ยนแปลงทางบัญชีในมหาวิทยาลัยของท่าน

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2. ในความคิดเห็นของท่าน บัณฑิตมีความสำคัญในการสนับสนุนและส่งเสริมความสำเร็จในการเปลี่ยนแปลงทางการบัญชีในมหาวิทยาลัยของท่าน

ปัจจัย	ไม่ สำคัญ 1	น้อย 2	ปานกลาง 3	มาก 4	มาก ที่สุด 5
1. การมีข้อกำหนดทางกฎหมายเกี่ยวกับบัญชี					
2. การสนับสนุนจากผู้บริหารระดับสูงของมหาวิทยาลัย					
3. การสนับสนุนจากสำนักงานคณะกรรมการการ อุดมศึกษา					
4. การสนับสนุนจากกรมบัญชีกลาง					
5. การมีส่วนร่วมกับหน่วยงานมาตรฐานการบัญชีภาครัฐ					
6. การมีทีมงานที่ปรึกษาภายในมหาวิทยาลัย					
7. การมีทีมงานที่ปรึกษาจากภายนอกมหาวิทยาลัย					
8. ความเพียงพอของพนักงานทางบัญชี					
9. ความเพียงพอของพนักงานบัญชีที่จำเป็นในการเข้ามามี ส่วนร่วม					
10. ความเพียงพอของพนักงานบัญชีที่มีความรู้ในการ บัญชีภาคเอกชน					
11. ความเพียงพอของพนักงานบัญชีประจำอย่างเพียงพอ					
12. ไม่มีการเปลี่ยนแปลงอย่างอื่นที่สำคัญกว่าการ เปลี่ยนแปลงทางการบัญชี					
13. ไม่มีการต่อต้านการเปลี่ยนแปลงโดยพนักงานที่พอใจ กับระบบบัญชีเดิม					
14. ได้รับงบประมาณสนับสนุนในการเปลี่ยนแปลงทาง บัญชี					
15. มีซอฟต์แวร์ทางบัญชีที่เหมาะสม					
16. ความง่ายในการออกแบบระบบบัญชีใหม่					
17. ความสมบูรณ์ของระบบสารสนเทศเกี่ยวกับข้อมูลทาง บัญชีที่ต้องการ					
18. ความเพียงพอของจำนวนคอมพิวเตอร์					
19. ความเพียงพอของผู้เชี่ยวชาญทางด้านเทคโนโลยี สารสนเทศ					
20. มีงบประมาณในการจ้างที่ปรึกษา					
21. มีความเข้าใจเกี่ยวกับข้อมูลที่ต้องการ					
22. มีความเข้าใจเกี่ยวกับการเก็บรวบรวมข้อมูล					
23. การเปลี่ยนแปลงวัฒนธรรมในการทำงานของ มหาวิทยาลัย					
24. มีการบริหารงานอย่างเป็นอิสระภายในมหาวิทยาลัย					
25. มีแผนการฝึกอบรมอย่างสม่ำเสมอ					
26. มีเอกสารแนะนำแนวทางในการเปลี่ยนแปลงทาง บัญชีที่ชัดเจน					
27. อื่น ๆ					

โปรดระบุ 3 ปัจจัยที่ท่านคิดว่ามีส่วนสนับสนุนต่อความสำเร็จในการเปลี่ยนแปลงทางการบัญชีในมหาวิทยาลัยของท่านมากที่สุด

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ส่วนที่ 4: ข้อมูลต้นทุน และ เทคนิคทางด้านต้นทุนที่ใช้ในสถาบันอุดมศึกษา

1. ท่านเห็นด้วยหรือไม่ว่าระบบบัญชีการเงินแบบเดิมตามเกณฑ์เงินสดที่ใช้ภายในมหาวิทยาลัยมีข้อมูลเพียงพอในการบริหารต้นทุน

ไม่เห็นด้วย

เห็นด้วยอย่างยิ่ง

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2. มหาวิทยาลัยของท่านมีการเปลี่ยนแปลงระบบบัญชีจากเกณฑ์เงินสดไปเป็นเกณฑ์ค่างเมื่อใด

- ก่อนปี 2544
- หลังปี 2544
- ไม่มีการเปลี่ยน
- อยู่ระหว่างการเปลี่ยนแปลง

3. ให้ท่านแสดงความคิดเห็นโดยระบุว่าปัจจัยต่อไปนี้มีความสำคัญอย่างไรต่อการรายงานข้อมูลทางด้านต้นทุนมหาวิทยาลัย

ปัจจัย	ไม่สำคัญ 1	น้อย 2	ปานกลาง 3	มาก 4	มากที่สุด 5
3.1 ปัจจัยภายนอก					
1. นโยบายของรัฐบาลต้องการให้ทุกหน่วยงานภาครัฐ รายงานต้นทุนต่อหน่วย (พระราชกฤษฎีกาการบริหาร จัดการบ้านเมืองที่มี มาตรา 21)					
2. ข้อมูลต้นทุนเป็นส่วนหนึ่งของการวัดผลการปฏิบัติงาน (KPI) เพื่อใช้ในการกำหนดเกณฑ์การให้โบนัสของ มหาวิทยาลัย					
3. ข้อมูลต้นทุนนำไปใช้ในการกำหนดการจัดสรร งบประมาณ					
4. อื่น ๆ โปรดระบุ.....					
3.2 ปัจจัยภายใน					
1. ข้อมูลต้นทุนช่วยในการจัดสรรงบประมาณภายใน มหาวิทยาลัย					
2. ข้อมูลต้นทุนช่วยในการจัดทำแผนกลยุทธ์ของ มหาวิทยาลัย					
3. ข้อมูลต้นทุนช่วยในการวัดและประเมินผลใน มหาวิทยาลัย					
4. ข้อมูลต้นทุนช่วยในการตัดสินใจของมหาวิทยาลัย					
5. ข้อมูลต้นทุนจำเป็นสำหรับผู้ใช้ภายในมหาวิทยาลัย เช่น คณบดี หัวหน้าสาขาวิชา หัวหน้าโปรแกรมวิชา และ หัวหน้างานฝ่ายสนับสนุนการศึกษา					
6. อื่น ๆ โปรดระบุ.....					

4. ท่านคิดว่าต้นทุนต่อไปนี้มีความสำคัญอย่างไรต่อมหาวิทยาลัยของท่าน

ปัจจัย	ไม่สำคัญ	น้อย	ปานกลาง	มาก	มากที่สุด
	1	2	3	4	5
1. ต้นทุนของมหาวิทยาลัย					
2. ต้นทุนของวิทยาเขต					
3. ต้นทุนของคณะ					
4. ต้นทุนของสาขาวิชา					
5. ต้นทุนของโปรแกรม					
6. ต้นทุนต่อหน่วยกิต					
7. ต้นทุนของนักเรียนแยกตามคณะ และสาขาวิชา					
8. ต้นทุนของงานวิจัย					
9. ต้นทุนการบริหารจัดการภายในมหาวิทยาลัย					
10. ต้นทุนกิจกรรมของมหาวิทยาลัย ของคณะ และของภาควิชา					
11. ต้นทุนของค่าธรรมเนียมนักเรียนต่างชาติในระดับสูงกว่าปริญญาตรี					
12. ต้นทุนของค่าธรรมเนียมนักเรียนต่างชาติในระดับปริญญาตรี					
13. ต้นทุนของค่าธรรมเนียมของนักเรียนในประเทศในระดับสูงกว่าปริญญาตรี					
14. ต้นทุนของค่าธรรมเนียมของนักเรียนในประเทศในระดับปริญญาตรี					
15. อื่น ๆ โปรดระบุ					

5. มหาวิทยาลัยของท่านมีการคำนวณข้อมูลต้นทุนต่อไปนี้หรือไม่

ปัจจัย	มี	ไม่มี	มีแผนในอนาคต
	1	2	3
1. ต้นทุนของมหาวิทยาลัย			
2. ต้นทุนของวิทยาเขต			
3. ต้นทุนของคณะ			
4. ต้นทุนของสาขาวิชา			
5. ต้นทุนของโปรแกรม			
6. ต้นทุนต่อหน่วยกิต			
7. ต้นทุนของนักเรียนแยกตามคณะและสาขาวิชา			
8. ต้นทุนของงานวิจัย			
9. ต้นทุนการบริหารจัดการภายในมหาวิทยาลัย			
10. ต้นทุนกิจกรรมของมหาวิทยาลัย ของคณะ และของภาควิชา			
11. ต้นทุนของค่าธรรมเนียมนักเรียนต่างชาติในระดับสูงกว่าปริญญาตรี			
12. ต้นทุนของค่าธรรมเนียมนักเรียนต่างชาติในระดับปริญญาตรี			
13. ต้นทุนของค่าธรรมเนียมของนักเรียนในประเทศในระดับสูงกว่าปริญญาตรี			
14. ต้นทุนของค่าธรรมเนียมของนักเรียนในประเทศในระดับปริญญาตรี			
15. อื่น ๆ โปรดระบุ			

6. โปรดระบุบริษัทซอฟต์แวร์เกี่ยวกับระบบการบริหารการเงินของมหาวิทยาลัยของท่าน

- Vision Net
- Solution
- INNOVA
- Oracle Corp
- SAP
- PeopleSoft
- Bann Quimica
- J. D. Edward
- Soft Square 1999
- มหาวิทยาลัยของท่านพัฒนาโปรแกรมขึ้นมาใช้เอง
- อื่น ๆ (โปรดระบุ.....)

การรายงานต้นทุน

7. ท่านคิดว่าหน่วยงานต่อไปนี้มีควมสำคัญอย่างไรในการรายงานข้อมูลต้นทุน

ปัจจัย	ไม่สำคัญ	น้อย	ปานกลาง	มาก	มากที่สุด
	1	2	3	4	5
1. กรมบัญชีกลาง					
2. สำนักงบประมาณ					
3. สำนักงานคณะกรรมการพัฒนาระบบราชการ (กพร.)					
4. สำนักงานคณะกรรมการการอุดมศึกษา (สกอ.)					
5. สำนักงานรับรองมาตรฐานและประเมินคุณภาพการศึกษา (สมศ.)					
6. ผู้บริหารสูงสุดของมหาวิทยาลัย					
7. คนบดี้					
8. หัวหน้าภาควิชา หรือหัวหน้าสาขา					
9. หัวหน้างานฝ่ายสนับสนุน					
10. อื่น ๆ โปรดระบุ.....					
.....					
.....					

8. มหาวิทยาลัยของท่านเริ่มรายงานต้นทุนให้กับหน่วยงานภายนอกมหาวิทยาลัยเมื่อใด

- ก่อนปี 2546
- หลังปี 2546
- ไม่มีการรายงานต้นทุน
- อยู่ระหว่างการพัฒนาการรายงานต้นทุน

9. มหาวิทยาลัยของท่านเริ่มรายงานต้นทุนให้กับหน่วยงานภายในมหาวิทยาลัยเมื่อใด

- ก่อนปี 2546
- หลังปี 2546
- ไม่มีการรายงานต้นทุน
- อยู่ระหว่างการพัฒนาการรายงานต้นทุน

10. ในความคิดเห็นของท่าน รายงานต้นทุนต่อหน่วยที่สามารถรายงานตามที่รัฐบาลต้องการมีความเหมาะสมกับความต้องการของมหาวิทยาลัยของท่านและหรือไม่

- ใช่
- ไม่ใช่ (โปรดระบุข้อมูลต้นทุนที่มหาวิทยาลัยของท่านต้องการ.....)

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11. ถ้ามหาวิทยาลัยของท่านเริ่มรายงานต้นทุนต่อหน่วยตามที่กำหนดในพระราชกฤษฎีกาบริหารจัดการบ้านเมืองที่ดีมาตรา 21 ปัจจุบันมหาวิทยาลัยของท่านอยู่ในขั้นตอนใด

- ขั้นวางแผน
- ขั้นกำลังดำเนินการ
- ขั้นเสร็จสมบูรณ์ และรายงานตามที่กำหนด
- มหาวิทยาลัยของท่านไม่ต้องรายงานต้นทุน

12. ในความเห็นของท่าน รายการใดต่อไปนี้จะมีผลกระทบต่อการจัดทำรายงานต้นทุนในมหาวิทยาลัยของท่าน

ปัจจัย	ไม่สำคัญ 1	น้อย 2	ปานกลาง 3	มาก 4	มากที่สุด 5
1. การเปลี่ยนแปลงระบบบัญชีจากเกณฑ์เงินสดไปเป็นเกณฑ์คงค้างยังไม่สมบูรณ์					
2. ระบบ (GFMIS) ยังไม่สมบูรณ์					
3. ระบบบัญชีสามมิติยังไม่สมบูรณ์					
4. ความยากในการกำหนดวัตถุประสงค์ต้นทุนและระบบบัญชีต้นทุน					
5. การใช้เวลามากในการรวบรวมข้อมูล					
6. มีความยากในการเก็บรวบรวมข้อมูลต้นทุน					
7. มีความยากในการกำหนดตัวหลักต้นทุน (cost driver)					
8. งบประมาณไม่เพียงพอในการจัดทำข้อมูลต้นทุน					
9. ขาดการสนับสนุนจากผู้บริหารสูงสุดในมหาวิทยาลัย					
10. ขาดรูปแบบของการรายงานต้นทุนตามแบบของรัฐบาล					
11. ขาดรูปแบบของการรายงานต้นทุนตามแบบของมหาวิทยาลัย					
12. ขาดความเข้าใจเกี่ยวกับกระบวนการของต้นทุน					
13. พนักงานบัญชีขาดประสบการณ์ในการทำบัญชีต้นทุน					
14. ขาดทีมที่ปรึกษาและฝึกอบรมภายใน					
15. ขาดทีมที่ปรึกษากายนอกที่เกี่ยวข้องภายในด้านต้นทุน					
16. ขาดทีมที่ปรึกษากายนอกเกี่ยวกับระบบ IT					
17. ขาดการยอมรับเบื้องต้นของสมาชิกในมหาวิทยาลัยในการคำนวณต้นทุน					
18. อื่น ๆ โปรดระบุ.....					

เทคนิคต้นทุน

13. มหาวิทยาลัยของท่านนำระบบต้นทุนกิจกรรมมาใช้หรือไม่

- ใช่ (ตอบข้อ 14)
- ใช่ แต่ได้ยกเลิกไปแล้ว (โปรดตอบข้อ 15)
- ไม่ใช่ (โปรดข้ามไปตอบข้อ 24)
- ไม่ใช่ แต่มีแผนที่จะใช้อีกครั้ง (โปรดข้ามไปตอบข้อ 24)

14. ถ้ามหาวิทยาลัยของท่านนำระบบต้นทุนกิจกรรมมาใช้ มหาวิทยาลัยของท่านอยู่ในขั้นตอนใดของระบบต้นทุนกิจกรรม

- การวางแผนและออกแบบขั้นตอนการนำระบบ ABC มาใช้
 - ขั้นสำรวจสิ่งอำนวยความสะดวกขั้นพื้นฐานที่ต้องการในการสนับสนุนการทำต้นทุนกิจกรรม
 - การพัฒนาและติดตั้งระบบต้นทุนกิจกรรม และอบรมพนักงาน
 - จัดทำโครงการนำร่องในการจัดทำต้นทุนกิจกรรม
 - จัดทำต้นทุนกิจกรรมแบบเต็มรูปแบบ
 - ใช้ต้นทุนกิจกรรมเป็นส่วนหนึ่งของงานประจำวัน
 - ใช้ระบบต้นทุนกิจกรรมร่วมกับระบบอื่น ๆ ในมหาวิทยาลัย
- (โปรดข้ามไปตอบข้อ 15)

15. ถ้ามหาวิทยาลัยของท่านเคยนำระบบต้นทุนกิจกรรมมาใช้ในอดีต แต่ได้ยกเลิกไปแล้ว มหาวิทยาลัยของท่านใช้ระบบบัญชีต้นทุนกิจกรรมอยู่ในขั้นตอนใด ขณะที่ถูกยกเลิก

- การวางแผนและออกแบบขั้นตอนการนำระบบ ABC มาใช้
- ขั้นสำรวจสิ่งอำนวยความสะดวกขั้นพื้นฐานที่ต้องการในการสนับสนุนการทำต้นทุนกิจกรรม
- การพัฒนาและติดตั้งระบบต้นทุนกิจกรรม และอบรมพนักงาน
- จัดทำโครงการนำร่องในการจัดทำต้นทุนกิจกรรม
- จัดทำต้นทุนกิจกรรมแบบเต็มรูปแบบ
- ใช้ต้นทุนกิจกรรมเป็นส่วนหนึ่งของงานประจำวัน
- ใช้ระบบต้นทุนกิจกรรมร่วมกับระบบอื่น ๆ ในมหาวิทยาลัย

16. หน่วยงานต่อไปนี้มีอิทธิพลอย่างไรต่อการตัดสินใจในการนำระบบต้นทุนกิจกรรมมาใช้ในมหาวิทยาลัยของท่าน

ปัจจัย	ไม่สำคัญ 1	น้อย 2	ปานกลาง 3	มาก 4	มากที่สุด 5
16.1 หน่วยงานภายนอก					
1. กรมบัญชีกลาง					
2. สำนักงานคณะกรรมการการอุดมศึกษา					
3. สำนักงาน กพร.					
4. อื่น ๆ โปรดระบุ.....					
.....					
.....					
16.2 หน่วยงานภายใน					
1. ผู้บริหารสูงสุดของมหาวิทยาลัย					
2. คณบดี					
3. หัวหน้าสาขา					
4. หัวหน้างานสายสนับสนุน					
5. อื่น ๆ โปรดระบุ.....					
.....					
.....					

17. มหาวิทยาลัยของท่านมีการนำระบบต้นทุนกิจกรรมมาใช้อย่างไร (ตอบได้มากกว่า 1 ข้อ)

- ทุกส่วนในมหาวิทยาลัย
- บางส่วนงานของมหาวิทยาลัย เช่น วิทยาเขต
- บางส่วนงานของมหาวิทยาลัย เช่น คณะ
- บางส่วนงานของมหาวิทยาลัย เช่น สาขาวิชา หรือ แผนก
- อื่น ๆ (โปรดระบุ.....)

18. ในความคิดเห็นของท่าน ท่านคิดว่ามหาวิทยาลัยของท่านประสบความสำเร็จจากการนำระบบต้นทุนกิจกรรมมาใช้เพียงใด

- ไม่ประสบความสำเร็จ
- ประสบความสำเร็จ
- ไม่สามารถประเมินได้ ณ ขณะนี้

โปรดระบุ 3 ปัจจัยที่สำคัญที่สุด ในการตอบคำถามในข้อ 17

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19. ในความคิดเห็นของท่าน ท่านคิดว่า มหาวิทยาลัยของท่านมีการนำระบบต้นทุนกิจกรรมมาใช้สืบเนื่องมาจากปัจจัยเหล่านี้ได้อย่างไร

ปัจจัย	ไม่เห็นด้วย 1	น้อย 2	ปานกลาง 3	เห็นด้วย 4	เห็นด้วย มากที่สุด 5
1. ระบบต้นทุนกิจกรรมในมหาวิทยาลัยของท่านได้รับการสนับสนุนจากผู้บริหารระดับสูง					
2. ระบบต้นทุนกิจกรรมมีวัตถุประสงค์ชัดเจนและเข้าใจเป็นอันเดียวกันทั้งผู้ออกแบบและผู้ใช้ข้อมูล					
3. มีการอบรมเกี่ยวกับการออกแบบและวัตถุประสงค์ของระบบต้นทุนกิจกรรมอย่างเพียงพอ					
4. ระบบค่าตอบแทนของมหาลัยออกแบบให้จูงใจพนักงานสนับสนุนการนำระบบต้นทุนกิจกรรมมาใช้					
5. มีทรัพยากรอย่างเพียงพอในการนำระบบต้นทุนกิจกรรมมาใช้					
6. รัฐบาลให้การสนับสนุนการใช้ระบบต้นทุนกิจกรรม					
7. สำนักงานคณะกรรมการอุดมศึกษาให้การสนับสนุนการใช้ระบบต้นทุนกิจกรรม					
8. มหาวิทยาลัยของท่านให้การสนับสนุนการใช้ระบบต้นทุนกิจกรรม					
9. อื่น ๆ โปรดระบุ.....					

ประโยชน์ของระบบต้นทุนกิจกรรม

20. ท่านคิดว่า มหาวิทยาลัยของท่านคาดหวังว่าจะได้รับประโยชน์จากการนำระบบต้นทุนกิจกรรมมาใช้จากปัจจัยต่อไปนี้ได้อย่างไร

ปัจจัย	ไม่เห็นด้วย 1	น้อย 2	ปานกลาง 3	เห็นด้วย 4	เห็นด้วย มากที่สุด 5
1. ความถูกต้องของข้อมูลต้นทุน					
2. การวัดผลการปฏิบัติงานที่ดีกว่าเดิม					
3. เพิ่มประสิทธิภาพในการจัดทำงานประมาณโดยสามารถระบุต้นทุนกับระดับการให้บริการ					
4. เพิ่มประสิทธิภาพในการตัดสินใจ					
5. เพิ่มประสิทธิภาพในการควบคุมต้นทุน					
6. เพื่อให้สามารถรายงานต้นทุนต่อหน่วยให้กับหน่วยงานของรัฐได้ตามพระราชกฤษฎีกามาตรา 21					
7. อื่น ๆ โปรดระบุ.....					

21. ท่านคิดว่า มหาวิทยาลัยของท่านได้รับประโยชน์จริงจากการนำระบบต้นทุนกิจกรรมมาใช้หรือไม่

ปัจจัย	ไม่เห็นด้วย	น้อย	ปานกลาง	เห็นด้วย	เห็นด้วยมากที่สุด
	1	2	3	4	5
1. ความถูกต้องของข้อมูลต้นทุน					
2. การวัดผลการปฏิบัติงานที่ดีกว่าเดิม					
3. เพิ่มประสิทธิภาพในการจัดทำงบประมาณโดยสามารถระบุต้นทุนกับระดับการให้บริการ					
4. เพิ่มประสิทธิภาพในการตัดสินใจ					
5. เพิ่มประสิทธิภาพในการควบคุมต้นทุน					
6. เพื่อให้สามารถรายงานต้นทุนต่อหน่วยให้กับหน่วยงานของรัฐได้ตามพระราชกฤษฎีกามาตรา 21					
7. อื่น ๆ โปรดระบุ.....					

22. ในความคิดเห็นของท่าน ท่านคิดว่า ประโยชน์ของระบบต้นทุนกิจกรรมในมหาวิทยาลัยของท่าน เป็นไปตามที่คาดหวังไว้หรือไม่

- เป็นไปตามที่คาดหวังในช่วงระยะสั้น
 เป็นไปตามที่คาดหวัง
 ประสบความสำเร็จตามที่คาดหวัง
 ไม่สามารถประเมินได้ ณ ขณะนี้

โปรดระบุ 3 ปัจจัยที่สำคัญที่สุดในการสนับสนุนคำตอบข้อ 21 ของท่าน

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ปัญหาในระบบต้นทุนกิจกรรม

23. ในความคิดเห็นของท่าน มหาวิทยาลัยของท่านมีปัญหาในการนำระบบต้นทุนกิจกรรมมาใช้หรือไม่

ปัจจัย	ไม่เห็นด้วย	น้อย	ปานกลาง	เห็นด้วย	เห็นด้วยมากที่สุด
	1	2	3	4	5
1. ขาดการสนับสนุนจากผู้บริหารของมหาวิทยาลัย					
2. ขาดการสนับสนุนจากรัฐบาล					
3. ความไม่ชัดเจนในความต้องการใช้ระบบต้นทุนกิจกรรม					
4. ขาดความชัดเจนในขั้นตอนแรกก่อนนำระบบต้นทุนกิจกรรมมาใช้					
5. ขาดแคลนพนักงานบัญชีที่มีความรู้ด้านต้นทุนกิจกรรม					
6. ขาดแคลนซอฟต์แวร์ที่เหมาะสม					
7. ต้นทุนสูงมากในการใช้ระบบต้นทุนกิจกรรม					
8. ใช้เวลานานในการคำนวณต้นทุนกิจกรรม					
9. ยากที่จะรวบรวมข้อมูลในการกำหนดตัวผลิตภัณฑ์ต้นทุน					
10. ยากที่จะกำหนดตัวผลิตภัณฑ์ต้นทุน					
11. ยากที่จะกำหนดกิจกรรมของมหาวิทยาลัย					
12. ปัญหาในการนำข้อมูลไปใช้ร่วมกับระบบอื่น ๆ ของมหาวิทยาลัย					
13. ขาดแคลนการวางแผนและการออกแบบระบบต้นทุนกิจกรรม					
14. ต้นทุนสูงมากในการรวบรวมข้อมูลต้นทุน					
15. ไม่มีที่ปรึกษาภายนอก					
16. อื่น ๆ โปรดระบุ.....					

ถ้าคำตอบของท่านในข้อ 12 *ไม่ใช่* โปรดตอบข้อ 23

24. ถ้ามหาวิทยาลัยของท่านไม่นำระบบต้นทุนกิจกรรมมาใช้ เหตุผลดังต่อไปนี้ที่ท่านเห็นด้วยหรือไม่อย่างไร

ปัจจัย	ไม่เห็นด้วย 1	น้อย 2	ปานกลาง 3	เห็นด้วย 4	เห็นด้วย มากที่สุด 5
1. ระบบต้นทุนเดิมให้ข้อมูลต้นทุนอย่างเพียงพอ					
2. ขาดนโยบายจากผู้บริหารระดับสูง					
3. ขาดงบประมาณสนับสนุนจากรัฐบาล					
4. มีความยากในการเก็บรวบรวมข้อมูลต้นทุน					
5. ต้นทุนสูงมากในการใช้ระบบต้นทุนกิจกรรม					
6. ยากที่จะเลือกซอฟต์แวร์ที่เหมาะสม					
7. ไม่มีผู้เชี่ยวชาญภายในมหาวิทยาลัยในการนำระบบต้นทุนกิจกรรมมาใช้					
8. ไม่มีที่ปรึกษาภายนอกในการนำระบบต้นทุนกิจกรรมมาใช้					
9. มีการนำระบบต้นทุนอื่นมาใช้ โปรดอธิบายในเนื้อที่ข้างล่างที่เตรียมไว้ให้					
10. อื่น ๆ โปรดระบุ.....					
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หากมหาวิทยาลัยของท่านมีการนำระบบต้นทุนอื่นมาใช้ โปรดอธิบายในเนื้อที่ข้างล่างที่เตรียมไว้ให้

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ส่วนที่ 5: ข้อมูลทั่วไป

ตอนที่ 5.1: ลักษณะของมหาวิทยาลัย

1. มหาวิทยาลัยของท่านเป็นมหาวิทยาลัยประเภทใด

- มหาวิทยาลัยของรัฐ
- มหาวิทยาลัยของรัฐแต่อยู่ในกระบวนการร่างทางกฎหมายของมหาวิทยาลัยในกำกับของรัฐ
- มหาวิทยาลัยในกำกับของรัฐ

2. มหาวิทยาลัยของท่านมีจำนวนวิทยาเขตมากเท่าไร

- น้อยกว่า 5 วิทยาเขต
- 5 -11 วิทยาเขต
- มากกว่า 12 วิทยาเขต

3. มหาวิทยาลัยของท่านก่อตั้งมาแล้วกี่ปี

- น้อยกว่า 10 ปี
- 11- 20 ปี
- 21- 30 ปี
- 31 -50 ปี
- 50 ปี ขึ้นไป

4. มหาวิทยาลัยของท่านมีจำนวนนักศึกษามากเท่าไร

- น้อยกว่า 2000
- 2001-5000
- 5001-10000
- 10001-20000
- มากกว่า 20000

5.2 ข้อมูลส่วนบุคคล

5. มหาวิทยาลัยของท่านได้รับงบประมาณเพียงพอกจากรัฐบาลหรือไม่

- น้อยกว่า 5 ปี
- 5 – 10 ปี
- 11 – 20 ปี
- มากกว่า 20 ปี

หากท่านมีข้อเสนอแนะประการใดที่จะเป็นประโยชน์และเกี่ยวข้องกับงานวิจัยเรื่องการเปลี่ยนแปลงการจัดทำบัญชีในสถาบันอุดมศึกษาภาครัฐโปรดเขียนรายละเอียดเพิ่มเติม

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ขอขอบคุณทุกท่านที่ให้ความอนุเคราะห์ตอบแบบสอบถาม

ผู้ช่วยศาสตราจารย์เพชรไพโรจน์ อุปปิง

นักศึกษาระดับปริญญาเอก

คณะบริหารธุรกิจและการประกอบการ

มหาวิทยาลัยเทคโนโลยีสวินเบิร์น

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ดร. จูดี โอลิเวอร์

อาจารย์ที่ปรึกษา

คณะบริหารธุรกิจและการประกอบการธุรกิจ

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Appendix 11: List of Thai Public Universities

1. Open university: There are 2 open-admission universities. They include Ramkhamheng University and Sukhothai University. These universities offering are mostly in the social science disciplines on campus and by long distance learning.

2. Limited admission public university: They are limited admission public universities which admit only those high school students who pass the highly competitive national entrance examination. There are both public and autonomous universities in this category. Of these 27 public universities and 11 Autonomous universities

3. The Rajabhat University: 37 Teacher Training Colleges changed their names in 1995 to 37 Rajabhat Universities situated around the country. Each individual university ends its name with “Rajabhat University”

4. The Rajamangala University of Technology: 36 campuses of public technical and commercial colleges were transformed into 9 Rajamangala Universities of Technology. Each individual starts its name with “Rajamangala University of Technology”. Table below sets out details of all Thai public universities.

Appendix: Thai public universities

Type of university	The name of university
1. Open University	1. Ramkhamhaeng University (RU) 2. Sukhothai Thammathirat Open University (STOU)
2. Limited admission public university 2.1 Public university	1. Kasetsart University (KU) 2. Khon Kaen University (KKU) 3. Maejo University (MJU) 4. Mahachulalongkornrajavidyalaya University (MCU) 5. Mahamakut Buddhist University (MBU) 6. Mahasarakham University (MSU) 7. Nakhon Phanom University (NPU) 8. Naresuan University (NU) 9. National Institute of Development Administration (NIDA) 10. Pathumwan Institute of Technology 11. Prince of Songkla University (PSU) 12. Princess of Naradhiwas University (PNU) 13. Queen Rambhai Barni Rajabhat University (QRU) 14. Silpakorn University (SU) 15. Srinakharinwirot University (SWU) 16. Thammasat University (TU) 17. Ubon Rajathanee University (UBU)

Type of university	The name of university
2.2 Autonomous University	<ol style="list-style-type: none"> 1. Burapha University (BUU) 2. Chiang Mai University (CMU) 3. Chulalongkorn University (CU) 4. King Mongkut's Institute of Technology Ladkrabang (KMITL) 5. King Mongkut's University of Technology North Bangkok (KMUTNB) 6. King Mongkut's University of Technology Thonburi (KMUTT) 7. Mae Fah Luang University (MFLU) 8. Mahidol University (MU) 9. Suranaree University of Technology (SUT) 10. Thaksin University (TSU) 11. Walailak University (WU) 12. Phayao University (PU)
3. The Rajabhat University	<ol style="list-style-type: none"> 1. Bansomdej Chaopraya Rajabhat University (BSRU) 2. Buriram Rajabhat University (BRU) 3. Chaiyaphum Rajabhat University (CPRU) Chandrasekhar Rajabhat University (CRU) 4. Chiang Mai Rajabhat University (CMRU) 5. Chiang Rai Rajabhat University (CRU) 6. Dhonburi Rajabhat University (DRU) 7. Kalasin Rajabhat University (KSU) 8. Kamphaeng Phet Rajabhat University (KPRU) 9. Kanchanaburi Rajabhat University (KRU) 10. Lampang Rajabhat University (LPRU) 11. Loei Rajabhat University (LRU) 12. Muban Chombueng Rajabhat University (MCRU) 13. Nakhon Pathom Rajabhat University (NPRU) 14. Nakhon Ratchasima Rajabhat University (NRRU) 15. Nakhon Sawan Rajabhat University (NSRU) 16. Nakhon Si Thammarat Rajabhat University (NSTRU) 17. Phetchabun Rajabhat University (PCRU) 18. Phetchaburi Rajabhat University (PBRU) 19. Phranakhon Rajabhat University (PNRU) 20. Phranakhon Si Ayutthaya Rajabhat University (ARU) 21. Phuket Rajabhat University (PKRU) 22. Pibulsongkram Rajabhat University (PSRU) 23. Queen Rambhai Barni Rajabhat University (QRU) 24. Rajabhat Maha Sarakham University (RMU) 25. Rajabhat Rajanagarindra University (RRU) 26. Sakon Nakhon Rajabhat University (SNRU) 27. Suan Dusit Rajabhat University (SDU) 28. Suan Sunandha Rajabhat University (SSRU) 29. Surat Thani Rajabhat University (SRU) 30. Surindra Rajabhat University (SRRU) 31. Thepsatri Rajabhat University (TRU) 32. Ubon Rajathanee University (UBU) 33. Ubon Ratchathani Rajabhat University (UBRU) 34. Udon Thani Rajabhat University (UDRU) 35. Uttaradit Rajabhat University (URU) 36. Valaya-Alongkorn Rajabhat University (VRU) 37. Yala Rajabhat University (YRU)

Type of university	The name of university
4. The Rajamangala University of Technology	1. Rajamangala University of Technology Isan (RMUTI) 2. Rajamangala University of Technology Krungthep (RMUTK) 3. Rajamangala University of Technology Lanna (RMUTL) 4. Rajamangala University of Technology Phra Nakhon (RMUTP) 5. Rajamangala University of Technology Rattanakosin (RMUTR) 6. Rajamangala University of Technology Srivijaya (RMUTSV) 7. Rajamangala University of Technology Tawan-Ok (RMUTTO) 8. Rajamangala University of Technology Thanyaburi (RMUTT) 9. Rajamangala University of Technology Suvarnabhumi (RMUTSB)

(Source: The Commission on Higher Education 2009)

Appendix 12: List of Publication Associated with This Thesis

Conference Paper

- Upping, P & Oliver, J 2008, 'Accounting reform in Thai public sector', *Global Accounting & Organisation Change Conference*, Hilton on the Park, Melbourne, Australia, 9-11 July 2008.
- Upping, P & Oliver, J 2010, 'Accounting change in Thai public universities', *Global Accounting & Organisation Change Conference*, Executive Conference Centre, Babson College, Boston, U.S.A. 21-24 July 2010.
- Upping, P & Oliver, J 2010, 'Factors influencing management accounting change: A case of Thai public universities', *The Fourth New Zealand Management Accounting Conference*, University of Waikato, Hamilton, New Zealand, 18-19 November 2010.
- Upping, P & Oliver, J 2010, 'Accounting change model for the public sector: Adapting Luder's Model for Developing Countries', *13th International Business Research Conference*, Novotel Hotel on Collins, Melbourne, Australia 22-24 November 2010.