FACTORS INFLUENCING THE IMPLEMENTATION OF ACTIVITY-BASED COSTING IN THAI COMPANIES

A Thesis Submitted
In Fulfilment of the Requirements for the Degree of
Doctor of Philosophy

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August 2013
DECLARATION

I certify that except where due acknowledgement has been made, the work is that of the author alone; the work has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program; any editorial work, paid or unpaid, carried out by a third party is acknowledged; and, ethics procedures and guidelines have been followed.

Paween Kongchan

August 2013
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<tbody>
<tr>
<td>3G</td>
<td>The Third Generation of mobile phone</td>
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<tr>
<td>ABB</td>
<td>Activity-Based Budgeting</td>
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<td>ABC</td>
<td>Activity-Based Costing</td>
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<td>ABCM</td>
<td>Activity-Based Costing Management</td>
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<td>ABM</td>
<td>Activity-Based Management</td>
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<tr>
<td>ADSL</td>
<td>Asymmetric Digital Subscriber Lin</td>
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<td>AEC</td>
<td>The ASEAN Economic Community</td>
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<td>AFTA</td>
<td>The ASEAN Free Trade Area</td>
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<td>AIS</td>
<td>Accounting Information System</td>
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<td>AMCs</td>
<td>The Asset Management Corporations</td>
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<td>AMT</td>
<td>Advanced Management Technology</td>
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<td>APEC</td>
<td>The Asia-Pacific Economic Cooperation</td>
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<td>ARMs</td>
<td>Assistant Relationship Managers</td>
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<td>ATMs</td>
<td>Automated-Teller Machines</td>
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<td>BANK</td>
<td>Banking Company</td>
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<td>BE</td>
<td>Buddhist Era</td>
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<td>BIBFs</td>
<td>The Bangkok International Banking Facilities</td>
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<td>BOT</td>
<td>The Bank of Thailand</td>
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<td>BSC</td>
<td>A Base Station Controller</td>
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<td>BTO</td>
<td>Build Transfer Operate</td>
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<td>BTS</td>
<td>A Base Transceiver Station</td>
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<td>CAM-I</td>
<td>The Consortium for Advanced Manufacturing, International</td>
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<td>CAPEX</td>
<td>Capital Expense</td>
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<td>CAT</td>
<td>The Communications Authority of Thailand</td>
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<td>CBO</td>
<td>Centralised Back Office</td>
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<td>CEE</td>
<td>The Channel Enhancement and Extension</td>
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<td>CEM</td>
<td>Customer Experience Management</td>
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<td>CFO</td>
<td>The Chief Financial Officer</td>
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<td>CIF</td>
<td>Cost, Insurance and Freight</td>
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<td>CMS</td>
<td>Cost Management System</td>
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<td>CRM</td>
<td>Customer Relationship Management</td>
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<td>CSR</td>
<td>Corporate Social Responsibility</td>
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<td>CT</td>
<td>Credit Transformation</td>
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<td>DCS</td>
<td>The Document and Collateral Control System</td>
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<td>DMS</td>
<td>The Document Management System</td>
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<td>EAD</td>
<td>E-Approach Development</td>
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<tr>
<td>EBITDA</td>
<td>Earnings before Interest, Tax, Depreciation and Amortisation</td>
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<td>ECA</td>
<td>Environment Cost Accounting</td>
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<td>EDC</td>
<td>The Electronic Data Capture</td>
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<td>EDCM</td>
<td>Electronic Delivery System &amp; Cash Management</td>
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<tr>
<td>Acronym</td>
<td>Description</td>
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<tr>
<td>EDGE</td>
<td>Enhanced Data Rates for GSM Evolution</td>
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<td>EIPP</td>
<td>The Electronic Invoice Presentation and Payment</td>
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<td>EJIP</td>
<td>The Employee Joint Investment Program</td>
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<td>EMA</td>
<td>Environmental Management Accounting</td>
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<td>ERM</td>
<td>Enterprise Risk Management</td>
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<tr>
<td>ERP</td>
<td>Enterprise Resource Planning</td>
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<tr>
<td>ESCAP</td>
<td>Economic and Social Commission for Asia and the Pacific</td>
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<td>ESOP</td>
<td>The Employee Stock Option Program</td>
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<td>EU</td>
<td>The European Union</td>
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<td>FAP</td>
<td>The Federation of Accounting Profession, Thailand</td>
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<td>FBD</td>
<td>Fee-based Business Development</td>
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<td>FIS</td>
<td>The Financial Information System</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>GGSN</td>
<td>Gateway GPRS Support Node</td>
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<td>GPRS</td>
<td>General Packet Radio Service</td>
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<td>GSM</td>
<td>Digital Global System Mobile</td>
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<td>HR</td>
<td>Human Resources</td>
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<td>HRIS</td>
<td>The Human Resource Information System</td>
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<td>HRMD</td>
<td>Human Resources Management Development</td>
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<tr>
<td>HSPA</td>
<td>High Speed Packet Access</td>
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<tr>
<td>IAS</td>
<td>The International Accounting Standards</td>
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<td>IC</td>
<td>An Interconnection Charge</td>
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<td>IFRS</td>
<td>The International Financial Reporting Standards</td>
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<tr>
<td>IMEI</td>
<td>The International Mobile Equipment Identity</td>
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<td>IMF</td>
<td>The International Monetary Fund</td>
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<td>ISO</td>
<td>The International Organisation for Standardisation</td>
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<tr>
<td>IT</td>
<td>Information Technology</td>
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<td>ITC</td>
<td>IT-Capital</td>
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<td>ITD</td>
<td>IT Infrastructure Development</td>
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<td>IVR</td>
<td>Interactive Voice Response</td>
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<td>JIT</td>
<td>Just in Time</td>
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<td>KB</td>
<td>Knowledge Base Management</td>
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<tr>
<td>KPIs</td>
<td>Key Performance Indicators</td>
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<tr>
<td>LPG</td>
<td>Liquefied Petroleum Gas</td>
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<tr>
<td>MAS</td>
<td>Management Accounting System</td>
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<td>MBA</td>
<td>Master of Business Administration</td>
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<td>MCS</td>
<td>Management Cost System</td>
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<td>MICT</td>
<td>The Ministry of Information and Communication Technology</td>
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<td>MMS</td>
<td>Multimedia Messaging Service</td>
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<td>MOF</td>
<td>The Ministry of Finance</td>
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<td>MOP</td>
<td>Market Operative Price</td>
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<td>MSC</td>
<td>The Mobile Switching Centre</td>
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<td>Abbreviation</td>
<td>Full Form</td>
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<tr>
<td>NAFTA</td>
<td>The North American Free Trade Agreement</td>
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<td>NMT</td>
<td>Nordic Mobile Telephone</td>
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<td>NPL</td>
<td>The Non-Performing Loans</td>
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<td>NTC</td>
<td>The National Telecommunications Commission</td>
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<td>OHSAS</td>
<td>Occupational Health and Safety Assessment Specification</td>
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<td>OIL</td>
<td>Oil Company</td>
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<td>OPEC</td>
<td>The Organisation of Petroleum Exporting Countries</td>
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<td>OPEX</td>
<td>Operating Expense</td>
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<tr>
<td>PA</td>
<td>Profitability Analysis</td>
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<tr>
<td>PDCA</td>
<td>Plan-Do-Check-Act</td>
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<td>PQI</td>
<td>Product Quality Improvement</td>
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<tr>
<td>QA</td>
<td>Quality Assurance</td>
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<tr>
<td>RAROC</td>
<td>Risk-Adjusted Return on Capital</td>
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<td>ROE</td>
<td>Return On Equity</td>
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<td>SEC</td>
<td>The Securities and Exchange Commission, Thailand</td>
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<td>SET</td>
<td>The Stock Exchange of Thailand</td>
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<tr>
<td>SG&amp;A</td>
<td>Selling, General and Administrative Expense</td>
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<td>SGSN</td>
<td>Servicing GPRS Support Node</td>
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<td>SHE</td>
<td>Safety, Health and Environment</td>
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<td>SMC</td>
<td>The Secondary Mortgage Finance Corporation</td>
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<td>SME</td>
<td>Small and Medium Enterprises</td>
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<td>SMS</td>
<td>Short Message Service</td>
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<td>TAC</td>
<td>Total Access Communication PCL</td>
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<td>The Thailand Asset Management Corporation</td>
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<td>TAO</td>
<td>TA Orange</td>
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<td>TDABC</td>
<td>Time-Driven Activity-Based Costing</td>
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<td>TELECOM</td>
<td>Telecommunications Company</td>
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<td>TF</td>
<td>Trade Finance</td>
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<td>Telephone Organisation of Thailand</td>
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<td>TQA</td>
<td>The Thailand Quality Award</td>
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<td>TQM</td>
<td>Total Quality Management</td>
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<td>UK</td>
<td>The United Kingdom of Great Britain and Northern Ireland</td>
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<td>UNDP</td>
<td>United Nations Development Programme</td>
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<td>US/USA</td>
<td>The United State of America</td>
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<td>VAS</td>
<td>Valued Added Service</td>
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<td>Value-Based Management</td>
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<td>WAP</td>
<td>Wireless Application Protocol</td>
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<td>WTO</td>
<td>The World Trade Organisation</td>
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ABSTRACT

This study aims to extend the understanding of contingency theory and the factors that influence Activity-Based Costing (ABC) and Activity-Based Budgeting (ABB) system adoption and implementation in developing economies. Case research was conducted in three large Thai companies from the telecommunications, banking and oil industries. Interviews were conducted with key personnel involved with design and implementation of the accounting system. The Telecommunications Company and Bank implemented ABC and research at the Oil Company was mainly involved in the implementation of ABB.

This research contributes to the literature in four areas. Firstly, the key literature investigating ABC adoption and implementation draws on contingency theory. However, the empirical research is dominated by quantitative, survey-based methods. While the theoretical framework was drawn from contingency theory, this research contributes to contingency theory with in-depth case analysis.

Secondly, this research contributes to the theory with a detailed investigation of six contingency factors: competition, government policy, technology, organisational strategy, organisational structure and organisational culture, throughout the adoption and implementation stages. It was found that competition in the market was the most important factor in adopting ABC/ABB systems. In Thailand recent changes in the economic, political, government policy and technology have caused changes in competition. This also linked to changes in organisational strategy. While the Telecommunications Company and Bank focused on differentiation strategy, this research shows how ABC was able to contribute to this strategic approach. In the case of the Oil Company which had a cost leadership strategy, ABB was adopted to meet these strategic goals. Other factors, including organisational culture and structure were shown to be important contributors to the design and implementation of ABC/ABB, and for subsequent use of that information. These findings contribute to the literature and highlight the differences in developing economies versus the previous findings in the literature which is dominated by Western company research. In addition to a difference between developed and developing economies, case research enabled a more detailed exploration of the interrelationship between the contingency factors and how they played out through the varying stages of implementation.

Thirdly, this research contributes to the contingency theory literature by providing in-depth study of management accounting system success through the factors identified by Shields (1995): top management support, competitive strategies, performance evaluation and
compensation, internal resources, design training, non-accounting ownership, and clarity of the objectives. While, the ABC team was responsible only for ABC implementation, the external consultants helped to design and implement the ABC model effectively. Top management support is a crucial factor especially as it drives other factors. Organisational culture of three cases, reflected in Thai culture, combined with an effective human resource development strategy enabled the companies to successfully implement ABC and ABB with minimal resistance. It is noted that the presence of different degrees of contingency factors produced different implementation and success narratives.

Fourthly, this research contributes to the management accounting literature by providing a detailed investigation of ABC adaptations to suit local needs. It was found that the design of ABC by the Bank was a hybrid combination of the ABC system and the TDABC concepts. The Telecommunications Company designed the ABC system by combining traditional cost system (such as departmental allocation) and ABC system. The ABB information flow of the Oil Company started with the setting up of expected profitability which was the last step of the traditional ABB information flow.

In summary, this research provides a unique focus on the design and implementation of ABC/ABB system in the telecommunications, banking and oil sectors in developing economies. Using qualitative case-based methods, the unique features of the ABC/ABB implementation in all three Thai companies were investigated, provides empirically meaningful and an in-depth explanation of the relationship between contingency factors which influence the implementation of ABC/ABB.

This study provides empirical evidence that enables a better understanding of the influence of contingency factors on the implementation of ABC/ABB in a developing country setting. This study would be beneficial for other companies in developing economies to assist with successful implementation of ABC/ABB in a shorter time period with fewer problems. Detailed explanations of the ABC/ABB implementation processes in this research enhance the understanding about the way that management accounting operates in a developing country.
CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND

Activity-Based Costing (ABC) is an internationally accepted cost system that arguably provides more information for managers than traditional cost accounting systems. ABC has emerged since the mid-1980s as being able to provide more accurate information to managers about the cost and profitability of their business processes, services and customers (Argyris & Kaplan, 1994; Bruns & Kaplan, 1987; Cooper & Kaplan, 1987, 1988; Johnson & Kaplan, 1987; O'Guin, 1991) and consequently, increasing interest and the adoption of the system can be found internationally (Argyris & Kaplan, 1994; Armstrong, 2002; Bjørnenak, 1997; Bright et al., 1992; Clarke et al., 1999; Cooper et al., 1992; Foster & Swenson, 1997; Innes & Mitchell, 1995; Innes et al., 2000).

Due to the complexity of the ABC system and the high consumption of resources needed for its implementation (Cobb et al., 1992), several studies have investigated the reason companies implement ABC and the factors that make the process successful. Some studies have concentrated on examining and describing the process of ABC implementation in order to assist successful implementation (Anderson, 1995; Arnaboldi & Lapsley, 2005; Gosselin, 1997; Liu & Pan, 2007; Majid & Sulaiman, 2008). However, technical factors alone cannot lead companies to be successful in the implementation (Cooper, 1990b; Cooper et al., 1992). Cooper et al. (1992) and Shields (1995) argue that contextual, behavioural and organisational factors influence the effective adoption and implementation of ABC.

Contingency theory is an organisational theory which has been used to describe the factors influencing the ABC implementation (such as Anderson, 1995; Baird et al., 2004; Gosselin, 1997). Contingency factors, such as competition, technology,
government policy, organisational strategy, organisational structure and organisational culture were found to be important influences in the implementation of ABC. However, most studies investigated only few factors and these were based on surveys which could not provide deeper insights into the factors and their interrelationships. These surveys also lacked an explanation about the process of ABC implementation within individual companies. Moreover, only a few studies on the implementation of ABC have been conducted in developing economies such as China (Fei & Isa, 2010a; Liu & Pan, 2007), Taiwan (Eldenburg et al., 2010), Malaysia (Maelah & Ibrahim, 2007; Majid & Sulaiman, 2008), and Thailand (Chongruksut, 2002; Chongruksut & Brooks, 2006; Morakul & Wu, 2001).

ABC has also been used in Activity-Based Budgeting (ABB) (Cokins, 2002). Only a few case studies have described the process of ABB adoption and implementation in developed countries such as the UK (Bunce et al., 1995; Liu et al., 2003; Mason, 1996) and the US (Block & Carr, 1999). To the author’s knowledge, no studies on ABB have been conducted in developing economies. As a consequence, both academics and practitioners pay less attention to the adoption and implementation of ABB and more on ABC, in general (Gosselin, 2006).

Given the minimal qualitative research on the ABC and ABB implementation processes and consistent with Hopper et al. (2009)’s finding that there is minimal management accounting literature on developing economies. This research contributes by filling the gaps in the literature.

While Kaplan & Cooper (1998a) claim that ABC has special relevance for developing economies because it provides a uniform approach to cost management, there may be different that influence the processes of adoption and implementation. Hofstede states that:

“different societies in the world have different histories and they maintain different values: there is no one universal human value system. Moreover, different societies have different resources and meet different practical problems.” (Hofstede, 2007, p. 415).
It is possible that developing economies would have their own way of implementing ABC in response to changes in the internal and external factors they encounter. The small number of studies in Thailand and the need for qualitative research provides a rationale for the further study of ABC adoption and implementation in this country.

This research investigates the implementation of Western management accounting techniques such as ABC in Thai companies, as they strive to succeed in the global competitive environment. Thailand is a fast developing country in the Southeast Asia and currently, its economy is mainly reliant upon exports which accounted for over 60% of GDP in 2009 (Office of The Thai National Economic and Social Development Board, 2010). The result of the expansion of trade opportunities supported by the Thai Government has enabled Thailand to become a member of several international trade organisations such as WTO, APEC, AFTA and NAFTA. Thai firms have had to meet the requirements of the global competitive environment and market and in order to survive and gain a competitive advantage, the adoption and development of contemporary production processes and management information systems may assist.

ABC became popular in Thailand after the Asian Financial Crisis of 1997 (Chongruksut, 2002). Several Thai companies were motivated to change their management accounting and controlling practices to increase their competitive potential in global markets (Chongruksut, 2002). Since then, ABC has been adopted by several large, publically listed and some non-listed companies (Chongruksut, 2002; Morakul & Wu, 2001; Tupmongkol, 2008).

This study details case research in three Thai companies from the telecommunications, oil and banking sectors to identify factors influencing the process of ABC implementation. In-depth interviews with key personnel in each organisation were conducted. Prior contingency theory literature is used to provide the key factors that influence four different stages of the implementation process (such as Anderson, 1995; Arnaboldi & Lapsley, 2005; Askarany et al., 2007; Gosselin, 1997; Krumwiede, 1998).

There are initiation and adoption, design, implementation and use of information (Arnaboldi & Lapsley, 2005). This study contributes to the accounting and contingency
theory literature on how organisations in developing economies implement Western accounting technologies.

1.2 RESEARCH OBJECTIVES

Cooper and Kaplan developed and reviewed ABC in 1987 in an attempt to address the limitations of traditional cost allocation. Cooper and Kaplan (1988) asserted that ABC provides several benefits, such as removing distortions from traditional cost accounting systems and providing accurate cost information for better decision-making through identifying the weaknesses of traditional cost accounting. Many leading companies such as Boeing, Eli Lilly and Allied Signal adopted and implemented ABC (O'Guin, 1991) and since then, several studies about its implementation have been documented in management accounting research.

This research investigated studies conducted on factors influencing ABC and its adoption in business entities in developed and developing economies that have been documented in management accounting research. Most studies have been conducted in developed countries such as the USA, the UK, Australia, Canada, Portugal and Finland. A few studies have been conducted in developing economies such as China, Taiwan, Malaysia, Thailand, South Africa, Saudi Arabia, and Iran (see Chapter 2). Hopper et al. (2009) found minimal management accounting literature on developing economies and suggests more research is required.

Moreover, the studies, which employed contingency theory to identify factors influencing the adoption and implementation of ABC and explore the factors that influence its success, are quantitative in nature. Extensive survey research does not provide detailed understanding of the factors influencing the entire process of ABC adoption and implementation (Gosselin, 2006). Otley (1980) supports the use of different research methodologies as case studies to improve the content of contingency approach for management accounting research.

Minimal ABC research has been conducted in Thai companies (Chongruksut, 2002; Chongruksut & Brooks, 2006; Morakul & Wu, 2001; Tupmongkol, 2008). Among the
existing studies, none has investigated ABC adoption and implementation in Thai listed companies using a qualitative approach. The small number of studies in Thailand and the need of qualitative research provide the rationale for further investigation into ABC adoption and implementation.

In order to fill the gaps identified above, this research has three key objectives:

1. To identify the different contingency factors influencing each stage of ABC implementation in large organisations.

2. To gain a better understanding of the contingency factors that influence ABC implementation in developing versus developed countries.

3. To contribute to the contingency theory literature with a qualitative case study approach that investigates the contingency factors operating in practice.

With the intention of enhancing the available literature on the implementation of ABC, this study uses contingency theory combined with qualitative research methodology. In adopting a case study approach, it is argued that rich empirical data will help to better understand management accounting process (Llewellyn, 1999; Parker, 2012).

1.3 RESEARCH QUESTIONS

The main goals of this study are to address the key research objectives and gain a better understanding of the factors that influence each stage of the ABC implementation and the manner in which companies implement the system successfully in practice. In relation to the objectives, six popular contingency factors (competition, government policy, technology, organisational culture, organisational structure, and organisational strategy) have been drawn from contingency theory literature to provide two overarching research questions.

The first overarching research question is: **Do the same contingency factors hold throughout the varying stages of ABC implementation?** This question is directed at
filling gaps in the literature relating to the interrelationship of factors through the four stages of ABC implementation.

The second overarching research question is: **Do the same contingency factors hold in developing versus developed countries?** This question is directed at filling the gaps in the ABC adoption and implementation in developed and developing economies.

The following six sub-research questions provide a research guide and help to answer the two overarching questions above. The first four sub-research questions investigate the factors influencing the adoption, design, implementation and use of the ABC system. The four stages of ABC implementation have been identified by Arnaboldi and Lapsley (2005). Through understanding the implementation process it is possible to identify relationships between contingency factors and other issues related to ABC implementation. As well, it is possible to identify key factors influencing the implementation of ABC that may only apply in the Thai context. Furthermore, this process helps to understand how Thai companies design and implement the ABC system and use ABC information. The following four sub-research questions have been formulated as:

In Thai companies:

1. What factors influence the adoption of ABC?
2. What factors influence the design of the ABC system?
3. What factors influence the implementation of?
4. What factors influence the use of ABC information?

The overall success of ABC in the final sub-research question is demonstrated by the acceptance and continued use of the ABC system by the Thai companies. The implementation process is time consuming and demanding of resources, hence Thai companies could well experience both the benefits and challenges.

5. What factors influence the success of ABC implementation by Thai companies?
Different factors influence the implementation of ABC and each Thai company faced conditions that affected the ABC process. The last sub-research question, which investigates the features of the ABC system, including indirect costs, activities and cost objects is:

(6) What are the overarching features of the ABC system developed in each Thai company and how are they different from the traditional ABC system described by Cooper and Kaplan (1987, 1988) and Johnson and Kaplan (1987)?

1.4 RESEARCH DESIGN

This research adopts the case study methodology to explore ABC implementation in Thai companies. To achieve the research objective and answer the questions, this study adopts a qualitative approach and draws on archival data provided by the case companies. The reasons for the use of the case study method are that the qualitative case study is an effective research strategy to understand the nature of management accounting in practice (Llewellyn, 1992; Parker, 2012; Scapens, 1990). Moreover, the case study allows researchers to use multiple data sources which enhance data creditability (Baxter & Jack, 2008; Yin, 2009) and provides an informal basis for theory-building (Eisenhardt & Graebner, 2007).

The research studies three Thai companies which were listed among the top 50 largest companies on the Stock Exchange of Thailand (SET) at the end of 2010. These companies have vast experience in implementing ABC and were willing to participate in the research. They are a Telecommunications Company (Telecom), Banking Company (Bank) and an Oil Company (Oil). In-depth interview was used as a main research method by interviewing 14 key personnel from top management who were involved in the implementation of ABC and influenced changes to the process. Face-to-face and semi-structured interviews were conducted to draw out more detailed narratives from participants about a particular topic. The interviews were conducted in Thai which is the first language of the participants and were audio-recorded and transcribed. Notes were taken concurrently with the audio-recording in order to manage
unexpected problems which may be caused during the process. Moreover, transcriptions were made in Thai to avoid missing specific meanings and expressions when analysing data.

The interview transcripts were sent to the interviewees to validate the recorded interview information. Several follow-up contacts were made through e-mail, telephone and a second schedule of interviews to confirm details, clarify unclear information and elicit further information. However, some information provided during interviews was not made available as hard copy material for this thesis, due to the interviewees’ need for confidentiality.

Internal confidential documents, public documents and archival records were reviewed and analysed. These documents were important to inform the interview questions as well as verify information that might have been mentioned in the interviews. Together, these methods could assist in the collaboration of findings and are known as the triangulation technique (Denzin & Lincoln, 2008; Yin, 2009).

Subsequently, the data was coded, by using elaborative coding, to a set of emerging themes, in line with research questions, literature and theory (Auerbach & Silverstein, 2003; Saldana, 2009). The data was coded manually within Microsoft Word 2003. The coded data was analysed through a within-case approach, and cross-case analysis. A within-case approach enables to emphasise on gathering detailed descriptions about each case which are essential for gaining insight; while a cross-case analysis emphasises pattern search and matching across the organisational case sites (Baxter & Jack, 2008; Yin, 2003).

Finally, a schema was constructed to re-tell the participants’ narratives in terms of theoretical constructs (Auerbach & Silverstein, 2003). This theoretical approach is described as a form of narrative analysis (Llewellyn, 1999).
1.5 RESEARCH CONTRIBUTION

This research contributes to management accounting literature, contingency theory and practice. Although there is recognition that ABC can play a key role in making organisations more successful in developing economies, there is a lack of research that provides meaningful explanation and assistance to those organisations. Therefore, it is not clear to date how companies can implement ABC to improve their profitability and sustainability. This research contributes to:

- Better understanding about how contingency factors influence the process of ABC/ABB implementation and its competitive advantage to Thai companies through the qualitative approach,

- The growing body of evidence on the ABC/ABB implementation processes in developing economies,

- Practice by demonstrating how traditional ABC models are adapted by practitioners in order to accommodate contingency factors, relevant to their specific environment.

1.6 THESIS ORGANISATION

This thesis consists of nine chapters. The purpose of each chapter and an overview of the thesis organisation are provided as follows.

*Chapter One* provides an overview of the research including motivation, objectives, questions, design, and contribution acknowledgement.

*Chapter Two* is a review of literature which contributes to an understanding of the fundamental principles and theories related to the implementation of ABC. This chapter discusses the development of ABC and reviews studies about its adoption and implementation. Moreover, it discusses the use of contingency theory and factors relating to the successful implementation of ABC and the manner in which they relate to the adoption and implementation of ABC in different contexts. Finally, the research
gaps which are found from the body of literature are identified and discussed in this Chapter.

*Chapter Three* presents the development of research aims and objectives, questions and conceptual framework of this study which are drawn from the research gaps, identified in Chapter 2 – Literature Review. This chapter explains three main assumptions which are found from the body of literature, proposes research questions and illustrates the formation of research questions and conceptual framework. It contributes to the research design which is explained in Chapter Four.

*Chapter Four* provides the detailed description of the research methodology and methods employed in this research. This chapter discusses the rationale for selecting the qualitative approach, an explanation of case study methodology, the in-depth interview method, research design, case selection, data collection, data analysis and the issues related to reliability and validity.

*Chapter Five, Six, Seven* describe the empirical findings from the three cases which are Telecommunications, Banking and Oil companies respectively. These chapters provide brief histories of the three industries in Thailand and background to the three case sites including the contingency factors that the companies faced. Furthermore, the processes of ABC implementation by the three case sites are explained. The implementation process includes four stages which are the adoption, design, implementation and use of information. In conclusion, this chapter describes the factors that influenced each stage of ABC implementation and identifies the successful elements of the process.

*Chapter Eight* provides the analysis and discussion of the findings to fulfil the research questions. The chapter describes the empirical findings about contingency factors that have influenced each stage of the implementation of ABC. Furthermore, it describes the successful outcome of ABC implementation through cross-case analysis and identifies the contribution of the research to literature and theory.

*Chapter Nine* provides the summary and conclusions of this research. This chapter also includes research implications, the limitations of the research and recommendations for further research.
CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

The literature review is organised into two parts. It offers a discourse about contingency theory from case studies and research in America and Britain. It focuses on quantitative research that has used contingency theory and emphasises the lack of qualitative research that includes contingency factors (Chenhall, 2012). Arnaboldi and Lapsley (2005), describe the need for further ABC research in different settings and that is discussed in the second part of the literature review.

The first part describes the general principles concerned with the adoption and implementation of ABC and is divided into three sections. The first section (Section 2.2) outlines the history and development of the ABC concept and includes information about ABB, ABM and TDABC. The application of contingency theory as a means of understanding changes to an organisation’s costing systems is provided in Section 2.3. The areas identified as in need of further research are discussed in Section 2.4 that is the final section of Part 1.

The second part of the literature review consists of three sections that describe the adoption and implementation of ABC in developing economies and identifies shortcomings such as the limited number of quantitative research projects undertaken from within this context. Section 2.5 provides an overview of the ABC/ABB adoption process in developing economies and identifies research gaps in the existing discourse. Section 2.6 describes the characteristics of contingency factors present in developing economies and the chapter summary is found in Section 2.7.
Furthermore, literature describing research initiatives in developing economies is reviewed with the objective of analysing the influence of contingency factors on management style and cultural norms (Hofstede, 1984, 2007) and the extent these influence the adoption and implementation of ABC.

PART 1: THE ADOPTION AND IMPLEMENTATION OF ABC

2.2 ACTIVITY-BASED COSTING (ABC)

The following section discusses the development of ABC by Cooper and Kaplan (1987), and Johnson and Kaplan (1987) and describes the generic features of the traditional system.

2.2.1 The History of ABC

During the early 1980s, Harvard academics were concerned about increasing international competition to American manufacturing and changes in consumer markets (Jones & Dugdale, 2002). As a consequence, more effective management techniques and manufacturing technologies such as JIT, TQM and AMT, were implemented by several American manufacturers (Jones & Dugdale, 2002). The costs of these technologies led to an increase in overhead and manufacturing costs (Cokins, 2002). Manufacturers had problems evaluating this new investment as traditional costing systems did not provide enough information for decision-making (Jones & Dugdale, 2002; Kaplan, 1984). Some managers and decision makers believed that the cost information from their existing costing systems (or traditional costing systems) had little relationship to business realities (Cooper et al., 1985).

In 1984, Robert Kaplan Professor of Accounting at Harvard Business School (Cooper & Kaplan, 1988), criticised traditional costing systems in manufacturing environments. He asserted that traditional costing systems were insufficient for business needs, inappropriate for ROI performance measurement and dominated by financial
accounting (Kaplan, 1984). Moreover, Kaplan (1985) assumed that progressive companies, that were leaders in developing JIT, TQM and AMT, were probably developing and implementing innovative accounting systems. He proved his assumption through the case of John Deere Component Works (Jones & Dugdale, 2002). The company found that when bidding for contracts its existing product costs were inaccurate (Jeans & Morrow, 1989). At the time, it used a standard cost accounting system which allocated overheads based on direct labour, machine hours and material value (Jeans & Morrow, 1989). In 1985, the Company analysed the shop floor process flow and identified support activities. Overheads were allocated to activities based on the estimated percentages of each overhead cost driver (Jeans & Morrow, 1989) and this innovative system became known as ABC.

In 1985, Robin Cooper, Associate Professor of Business Administration at Harvard Business School (Cooper, 1988), discovered innovative costing practices in the field research of the Schrader Bellows Group (Jones & Dugdale, 2002). Though the analysis of product profitability, the Company found that its traditional standard costing system concealed costs caused by lost products (Cooper et al., 1985). Support department costs, including sales and general administration, were allocated to the manufacturing departments based on their direct labour hours and it was argued that this method had little relationship with reality. Subsequently, the Company sought to allocate costs based on support overheads henceforth, support costs were allocated based on the proportion of components that each product required.

Furthermore, in 1987 Thomas Johnson, Professor of Cost Management at Portland State University (Johnson & Kaplan, 1987) used the case of the Weyerhaeuser Corporation to describe the problems of traditional costing systems. Traditional costing systems assign overheads to departments that consume overhead resources, not to departments that use overhead service. The traditional cost system focuses on cost numbers rather than activities that cause costs (Johnson & Loewe, 1987). Kaplan (1994) described the costing system of the Weyerhaeuser Corporation as similar to those of John Deere Component Works and Schrader Bellows Group and as a consequence of this research, Thomas Johnson joined the Harvard Network (Jones & Dugdale, 2002).
In an attempt to resolve the problems of traditional costing systems that American manufacturing faced in 1986, Consortium for Advanced Manufacturing, International (CAM-I) initiated the Cost Management System (CMS) Project. The aims of the CMS Project were to design a method of allocating overheads appropriately and assist companies develop accurate costing systems (Miller, 1996). CAM-I was formed in 1972 by an American association of leading industrial, accounting, academic and professional societies and government agencies that included Kaplan and Cooper (Berliner & Brimson, 1988). CAM-I aimed to establish computer-aided technology for manufacturing applications (Jones & Dugdale, 2002).

The result of the CMS Project was that products and/or services that did not consume cost directly, consumed money which in turn was spent on activities (Berliner & Brimson, 1988). This new costing method, known as ABC, was first published in the Harvard Business Review ‘Measure cost right; make the right decision’. Since then, ABC has been described as an effective cost allocation system that provides more accurate cost information than traditional costing systems.

2.2.2 The Traditional Costing Systems and ABC System for Cost Allocation

Kaplan, Cooper and Johnson found that the limitations of traditional costing systems hindered the American corporation’s response to changes in the manufacturing environment.

As shown in Figure 2-1, traditional cost systems and ABC systems have two stage of cost allocation. In the traditional costing system, indirect costs or overhead costs are grouped into one or more cost pools in the first stage. In the second stage, they are allocated to individual products or services (cost objects) using a cost-allocation base. Traditionally, a single overhead rate or departmental rate that is a “volume-related driver”, such as direct labour or machine hours, is used as a cost-allocation base.

The use of single cost-allocation base to assign all overhead costs depends on subjective judgement. There is not any verifiable cause-and-effect relationship between cost drivers and cost objects that leads to the arbitrary and frequently inaccurate process of cost allocations (Cooper & Kaplan, 1988). As a result, cost information will be distorted
and generate inefficient strategic decision-making. Moreover, overhead cost pools are based on departments that consume resources, not those that need resources to complete products or services (Johnson & Loewe, 1987). Consequently, traditional costing systems were unable to identify the number of resources consumed in designing, producing, marketing and delivering products (Kaplan, 1988). It provided inaccurate information for product mix and pricing decisions.

**Figure 2-1: The comparison between cost allocation in traditional cost and ABC systems**

![Diagram showing the comparison between traditional cost and ABC systems](image)

Sources: (Drury, 2004; Elednung et al., 2005; Langfield-Smith & Hilton, 2009)

Conversely, the ABC concept describes indirect costs or overhead costs that are allocated to activities cost pools based on resource cost drivers. Subsequently, activity costs are allocated to cost objects based on activity cost drivers (Cooper, 1990a, 1990b; Cooper & Kaplan, 1987, 1988). Activity cost drivers capture the causal relationship between cost objects and the occurrence of overhead costs that can be either volume and non-volume related drivers.
Cooper & Kaplan (1991) developed a cost hierarchy for structuring thinking about the relationship between activities and the resources the activities consume. This paradigm enables companies to identify activities and assign costs to activities. The cost hierarchy is divided into five levels of activities including unit-level, batch-level, product-sustaining, customer-sustaining and facility-sustaining (Kaplan, 1994).

Cost allocation in a traditional cost system relies on unit-level cost drivers in which costs are distributed to each unit produced based on the number of units produced, labour hours or machine hours. With the frequency of cost identification including batch-level, product-level, and facility-level overhead, ABC provides more accurate product cost information than traditional costing systems which identifies all costs as unit-level costs. The information is more comprehensive and accurate when it incorporates the cost hierarchy.

2.2.3 The Expansion of ABC

ABC has been developed to Activity-Based Management (ABM) for management purposes and ABB for cost planning and control purposes. The development and concept of ABM and ABB are described as follows.

2.2.3.1 The development and concept of ABM

During the 1990s, after the ABC system was introduced in the 1980s, companies rarely used activity information to support and drive business and this led to the development of ABM (Miller, 1996). ABCM or ABM is the process of developing activity-based thinking from a costing technique to a management principle (Jones & Dugdale, 2002). While ABC provides accurate cost information, ABM uses ABC information for continuous improvement (Turney, 1992). Thus, ‘ABC + ABM = Action’ (Clark & Baxter, 1992).

As shown in Figure 2-2, ABM focuses on the management of activities to improve customer value and company profit occurs through providing this value (Miller, 1996). ABM draws on ABC as its major source of information for processing continuous improvement which includes activity, cost driver, and performance analysis (Miller, 1996). Therefore, ABM influences business decision-making.
2.2.3.2 The development and concept of ABB

ABC was implemented in the 1990s and its use as a budget tool increased due to the limitations of traditional systems (Gosselin, 2006). Generally, traditional budgeting processes focused on resource and financial information that resulted in a disconnection between an organisation’s strategic response to customer needs and employee actions (Brimson & Antos, 1999). As a result, it provided inappropriate solutions to achieving financial targets and incremental annual budgeting outcomes (Clarke, 2004).

During 2000, the CMS Project under the CAM-I organisation developed an activity-based approach for planning and budgeting. The objective of this approach was to reduce the problems of traditional budgeting that companies faced (Sandison et al., 2003). Hence, ABB was created to produce more realistic budgets, accurate identification of resource needs and better linkages between cost to outputs than traditional budgeting (Clarke, 2004) for financial and operational planning (Sandison et al., 2003). ABB estimates the workload and resource requirements to meet the future demands for products and services through an activity-based construct (Cokins, 2002). ABB is inverse to the ABC process hence it produces financial plans and budgets that
commence with a forecast of the planned sales volume for each product (Brimson & Antos, 1999).

As shown in Figure 2-3, Cokins (2012) states that historical data from the ABC system is used to estimate activities needed to produce a specific volume (requirement analysis), evaluate the resources required to support those activities (capacity analysis), and determines the cost of those resources (cost analysis).

**Figure 2-3: The ABB information flow**

![The ABB information flow](image)

Source: Cokins, 2012, p.347

**2.2.3.3 The relationship between ABC, ABB and ABM**

As described previously, ABM and ABB were developed to promote the use of ABC information as a management tool. ABC is central to the production of accurate cost information for ABM and ABB (see Figure 2-4). The ABM approach analyses ABC information for better decision-making and improving business operations and performance whereas ABB uses ABC information for future planning and control purposes.
Many companies experience difficulties with ABC implementation that results in its abandonment (Byrne et al., 2009; Foster & Swenson, 1997; Gosselin, 1997; Kaplan & Anderson, 2004; McGowan & Klammer, 1997; Nguyen & Brooks, 1997). The reasons for failure of the adoption and implementation process include the time and costs of data collection. Data collection consumes multiple activities and cost drivers, and does not recognise unused capacity.

In 2004 Kaplan and Anderson (2004, 2007) produced a subsequent version of ABC, known as TDABC that addresses the shortcomings of the previous system. The TDABC method removes activity pools and uses time equation to assign resource costs directly to cost objects instead of transaction drivers. Time equation is calculated from the estimated standards of working hours and equivalence coefficients that is included idle capacity costing (see Figure 2-5).

Source: Combination of the ABM model (Miller, 1996, p. 236) and the ABB information flow (Cokins, 2012, p. 347) prepared by researcher

2.2.3.4 Time-Driven Activity-Based Costing (TDABC)
Kaplan and Anderson (2004) assert that TDABC provides information as accurate as the conventional ABC system and the cost and time required to develop and maintain the costing model is less. However, it is claimed that in this method 1) the evaluation of time results in overestimation of time spent and the errors in time equations (Cardinaels & Labro, 2008; Gervais et al., 2010; Hoozée & Bruggeman, 2010) and 2) TDABC generates inaccurate cost information and therefore is the same as a traditional costing method (Ratnatunga et al., 2012).

Although Kaplan and Anderson (2007) claim that more than 200 companies use TDABC, only a few articles (Kaplan & Anderson, 2004, 2007; Kaplan & Porter, 2011; McGowan, 2009; Szychta, 2010) and case studies address this issue (Cardinaels & Labro, 2008; Demeere et al., 2009; Everaert, Bruggeman, & De Creus, 2008; Everaert, Bruggeman, Sarens, et al., 2008; Gervais et al., 2010; Hoozée & Bruggeman, 2010; Öker & Adigüzel, 2010; Pernot et al., 2007; Ratnatunga et al., 2012; Stouthuysen et al., 2010). Given the minimal research that explores these more recent adaptations in practice, further research in this area is required. This will contribute to the earlier studies which are now detailed in the next sub-sections.
2.2.4 Subsequent Adoptions of ABC in Practice

Subsequent to its introduction in 1987, the ABC system was implemented in several large American manufacturing companies such as Boeing, Eli Lilly and Allied Signal (O'Guin, 1991). Most companies recorded a reduction in inventory costs and were able to design profitable manufacturing and planning strategies through using the system. ABC has been implemented in the banking, healthcare and telecommunications sectors in the UK, Europe, North America, Canada and Australia.

Some studies investigate the factors that influence companies to implement ABC and the different implementation phases. In the USA, Shannon Anderson (1995) investigated the implementation of ABC by General Motors and identified the technical and organisational factors that influenced its success. She developed a socio-technical framework and used case study research to determine the changes to General Motors’ costing system. In 1991, General Motors adopted ABC in response to global competition and the development of advanced manufacturing practices. The involvement of individual employees, centralisation, the complexity of ABC technology, the tasks of employees involved in the project and the external environment (competition and external consultants) influenced its implementation. She stressed the importance of the socio-technical setting as the mechanism through which people and the ABC system are linked. Linking people to the ABC system is a relationship necessary to its understanding and the continual use of the data. Anderson discovered these factors and they have been used as independent variables in subsequent quantitative studies (see Al-Omri & Drury, 2007; Anderson & Young, 1999; Ittner et al., 2002).

Mays and Sweeney (1994) described the implementation of ABC by the First Tennessee National Corporation, an American regional bank holding company, and in 1989, Hobdy et al. (1994), discussed the experience of AT&T, a North American telephone company. These companies were motivated to implement ABC due to changes in regulatory policies designed to increase competition. The traditional cost systems were seen as ineffective and unable to assist them in response to these changes. ABC was introduced to these companies through and seminars and in consultation with
academics (Hobdy et al., 1994; Mays & Sweeney, 1994). After implementation, both companies received benefits from the use of ABC.

Moreover, ABC has been implemented in developed economies at the insistence of parent companies (Ezzamel et al., 2004; Innes & Mitchell, 1993) due to increasing global competition (Gwynne & Ashworth, 1993; Soin et al., 2002). Two American owned UK based manufacturing plants studied by Innes and Mitchell (1993) and Ezzamel et al. (2004), implemented ABC due to intense market competition. Innes and Mitchell (1993) stated the companies implemented ABC successfully due to support from external consultants, and top management and employee participation in data gathering. In contrast, Ezzamel et al.’s (2004), case site had been attempting to implemented ABC for over 13 years due to workforce resistance. Employees thought ABC would compel them to work harder and result in a reduction of staff.

Evans Medical, a British pharmaceuticals company, was studied by Bhimani and Pigott (1992) once it decided to implement ABC in response to several shortcomings of its conventional absorption costing system (technical factors). Bhimani and Pigott (1992) found that external consultants, non-accountants and existing input information were important to implementation success which is similar to the findings of Innes and Mitchell (1993). They asserted that the implementation of ABC affected the accounting function and changed the attitudes of line managers using the data in their communication with accountants.

Furthermore, banking and telecommunications companies in the UK and Europe implemented ABC in response to the deregulation of their industries. A British telecommunication company (Gwynne & Ashworth, 1993), a UK-based multinational bank (Soin et al., 2002) and a Portuguese bank implemented ABC due to increasing competition caused by deregulation. Moreover, they believed ABC would provide more accurate costing than traditional costing methods. Conversely, the Portuguese telecommunications company (Marconi) was compelled to implement ABC following the EU regulations (Hopper & Major, 2007), although it faced the same deregulated market as Mercury did.
A regional blood transfusion service that is a part of the UK’s National Health Service, adopted ABC for cost reduction and control (Arnaboldi & Lapsley, 2005). Arnaboldi and Lapsley (2005) identified the factors influencing each stage of the implementation process using case study and they found that the important factors were top management support, corporate strategy and resources, a competitive environment, external consultants, team size and heterogeneity and training and interaction with existing systems.

2.3 CONTINGENCY FACTORS INFLUENCING THE ADOPTION AND IMPLEMENTATION OF ABC/ABB

Contingency theory provides an understanding of the factors that influence the adoption of ABC (Anderson, 1995; Anderson et al., 2002; Anderson & Young, 1999; Baird et al., 2004; Cadez & Guilding, 2008; Gosselin, 1997; Innes & Mitchell, 1995; Kallunki & Silvola, 2008; Liu & Pan, 2007). This theory has been used to explain changes in management accounting practices from the 1960s until the present.

2.3.1 The Fundamental of Contingency Theory

Classical management theorists such as Henri Fayol, F.W. Mooney and Colonel Lyndall Urwick shared their experiences of successful organisations and during the process, emphasised the problems of practical management (Morgan, 1996, p. 18). Each theorist gained insights from a combination of military and engineering principles, bureaucratic organisation and scientific management. Morgan (1996, p. 39) stated that these theorists perceived organisation as closed mechanical systems and concentrated on principles of internal design. As a result, classical management theorists paid little attention to the environment in which organisations existed. Changes in task and contextual environments are important for organisations to develop appropriate operational and strategic responses.

It has been suggested that “organisations, like organisms, are open to their environment” (Morgan, 1996, p. 39).
An alternative description of this construct is that an organisation adapts to the environment in which it exists and this is known as ‘contingency theory’.

Contingency theory describes organisational behaviour and was popular in the 1960s. It emphasises how contingency factors affect the design and functionality of organisations (Covaleski et al., 1996). That is, if contingency factors are positive then, the outcome will be one of high performance. Morgan (1996, p. 44) describes the principles of contingency theory as applied to organisation as follows:

- Organisations are open systems that need careful management to satisfy and balance internal needs and to adapt to environmental circumstances.
- There is no one best way of organizing. The appropriate form depends on the kind of task or environment one is dealing with.
- Management must be concerned, above all else, with achieving alignments and good fits.
- Different types or species of organisations are needed in different types of environments.

It can be seen that the central construct of contingency theory is that there is not a universal best management accounting practice that is equally applicable to all organisations and all situations (Gordon & Miller, 1976; Otley, 1980; Scott, 1998). Thus organisational characteristics are shaped to fit contingencies in order to retain high performance (Donaldson, 2001, p. 2).

### 2.3.2 The Development of Contingency Theory

Contingency theory has been used to describe changes in organisations since 1960, changes in management accounting practices since 1970, and changes in costing systems since 1990. These changes are shown in Table 2-1 and described in the following sections.
Table 2-1: The development of key contingency factors in organisational, management accounting and ABC researches

<table>
<thead>
<tr>
<th>Contingency Factors</th>
<th>Literature</th>
<th>Adoption in Management Accounting research</th>
<th>Adoption in ABC research</th>
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<tr>
<td>5. Organisational culture</td>
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<td>(Baird et al., 2004; Eldenburg et al., 2010; Ezzamel et al., 2004; Fei &amp; Isa, 2010a; Major &amp; Hopper, 2005; Malmi, 1997; Morakul &amp; Wu, 2001; Vieira &amp; Hoskin, 2005)</td>
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<tr>
<td>6. Government policies</td>
<td></td>
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<td>(Hopper &amp; Major, 2007)</td>
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2.3.2.1 The adoption of Contingency theory in organisational studies

In the 1960s, most studies were based on structural contingency theory that focused on the association between contingency factors and organisational structure (Burns & Stalker, 1961; Chandler, 1962; Lawrence & Lorsch, 1967; Perrow, 1967; Thompson, 1967; Woodward, 1958). The first set of contingency factors included technology
(Lawrence & Lorsch, 1967; Perrow, 1967; Woodward, 1958), the **task environment** (Lawrence & Lorsch, 1967; Thompson, 1967) and **organisational strategy** (Chandler, 1962). The studies in this area stated that contingency determines the **organisational structure** because it follows that an organisation which changes its contingency consequently changes its structure (Donaldson, 2001).

During this period, there were six key studies which expanded the parameters of organisational contingency theory.

Woodwards (1958) studied factors affecting line supervisors and technical specialists in British manufacturing firms who applied technology to the production process. Firms were classified into three main groups based on the characteristics of their production processes: unit production, mass production and process production. She found differences in technology resulted in differences in organisational structure. Firms with mass production technologies were likely to have **mechanistic management systems**; while, firms with unit or process production technologies were likely to have **organic systems of management**.

Burns and Stalker (1961) were renowned for identifying the distinction between ‘mechanistic’ and ‘organic’ approaches to organisation and management by studying the relationship between technical innovation and organisational structure in British companies. They discovered that innovation was low in firms with mechanistic systems of management which had clear patterns of duties and responsibilities. In contrast, innovation increased in firms that had organic systems of management and delegation of authority and decision-making. Business leaders therefore, need to look at the environmental contingencies and assess whether or not the organisation is capable of handling uncertainties and able to process the requisite amount of information.

Chandler (1962) investigated the changes in organisational strategy that affect the structure of American industrial enterprises. His findings confirmed that the market environment was an important factor in stimulating changes to structure and strategy. Initial growth, integration and diversification strategies created a dynamic market and to meet the demands, firms rearranged management to centralised, functionally departmentalised structures.
Lawrence and Lorsch (1967) found that different parts of the organisation face different task environments as markets and technology change. For example, the environment of the marketing department in a typical manufacturing firm responds to competition, market fluctuations and customer preference. Conversely, the environment of the research and development department is technical innovation such as product design and development. They present two patterns of organisational form or structure comprised of differentiation and integration. Differentiation is defined as:

“the difference in cognitive and emotional orientation among managers in different functional departments”. The definition of integration, contrastingly, is “the quality of the state of collaboration that exists among departments that are required to achieve unity of effort by the demands of the environment” (Lawrence & Lorsch, 1967, p. 11).

Their findings indicate that in turbulent environments, firms seem to be more effective with a high degree of differentiation between subtasks especially if the differentiated units are integrated. Conversely, firms operating in stable environments did not need a high degree of differentiation of subtasks and integration between units.

Thompson (1967) concurred with Lawrence and Lorsch (1967), that changes in technologies and task environments effect organisational structure. Thompson proposed four classifications of the organisational environment: stable and homogeneous, stable and heterogeneous, unstable and homogeneous, and unstable and heterogeneous. He argued that heterogeneous and dynamic task environments have significant implications for organisational structure. For example, organisations with heterogeneous task environments need to establish structural units for each sector. Thus, a divisional structure tends to be appropriate for a diversified organisation.

Perrow (1967) examined the relationship between technology and organisational structure. Technology in this study has been classified into four kinds: craft, non-routine, routine and engineering technologies. He identified three dimensions of organisational structure: the discretionary authority and power of middle and lower management groups; the coordination base within each group and the interdependence of the groups. His conclusion indicates that organisations which have non-routine technologies are associated with the organic management paradigm of Burn and Stalker (1961).
Organisations that have routine technology are associated with a mechanistic management structure.

In summary, it is clear that firms will experience the environment differently. Thus, the studies mentioned above support the contingency theory construct that there is not a best way of organisation. Firms respond to their environment based on their knowledge and experience and from that, select a suitable form of organisation.

2.3.2.2 The adoption of Contingency theory in management accounting studies

During the 1970s and 1980s, there was an interest in examining the relationship between contingency factors and organisational structure (Chenhall & Morris, 1986; Donaldson, 2001; Ginzberg, 1980; Gordon & Miller, 1976; Gordon & Narayanan, 1984; Jones, 1985a; Khandwalla, 1977; Merchant, 1981, 1984; Miles et al., 1978; Otley, 1980; Waterhouse & Tiessen, 1978). The researchers asserted that the external environment probably exerted the strongest influence for change on organisational structure (Chenhall & Morris, 1986; Ginzberg, 1980; Gordon & Miller, 1976; Gordon & Narayanan, 1984; Jones, 1985a; Khandwalla, 1977; Otley, 1980; Waterhouse & Tiessen, 1978). In addition, technology (Jones, 1985a; Khandwalla, 1977), organisational strategy (Khandwalla, 1977; Miles et al., 1978) and size (Khandwalla, 1977; Merchant, 1981, 1984) also have a significant impact on organisational structure.

Moreover, contingency theory has been extensively used in management accounting research on the effects of the adoption, design, implementation and use of new management accounting practices such as Management Control System (MCS), Budgeting, and the Accounting Information System (AIS). Most researchers agree that technology (Ginzberg, 1980; Jones, 1985a; Merchant, 1984), external environment (Ginzberg, 1980; Gordon & Miller, 1976; Gordon & Narayanan, 1984; Innes & Mitchell, 1990; Khandwalla, 1972; Merchant, 1984; Otley, 1980; Waterhouse & Tiessen, 1978), organisational strategy (Chenhall & Morris, 1986), and size (Ezzamel, 1990; Jones, 1985b; Merchant, 1984) have considerable effect on changing management accounting practices. Subsequently, organisational structure became an independent variable because it was perceived as a contributing factor to management accounting changes (Bruns & Waterhouse, 1975; Chenhall & Morris, 1986; Ginzberg,
1980; Gordon & Miller, 1976; Jones, 1985a, 1985b; Merchant, 1981, 1984; Otley, 1980; Waterhouse & Tiessen, 1978). Moreover, during the 1980s, the effect of cultural mores was included as a factor influencing changes in management accounting practice. (Ginzberg, 1980; Gray, 1988).

2.3.2.3 The adoption of Contingency theory in ABC studies

ABC was introduced at the end of 1980s as a new costing technique that provided more accurate cost information than traditional costing systems. The introduction of ABC led to changes in costing systems in international organisations and since 1990 Contingency Theory has been used to study the factors influencing its implementation. Predicated on this construct, current management accounting practices have changed to meet conditions faced by firms (Donaldson, 2006). The changes to practice have been shaped by contextual and organisational factors and are described as contingency factors (Chenhall & Morris, 1986). Therefore, researchers use this theoretical framework to explain the reasons for and effects of contingency factors on management accounting practices (Abdel-Kader & Luther, 2008; Amat et al., 1994; Bruggeman & Slagmulder, 1995; Otley, 1980; Thomas, 1986; Tiessen & Waterhouse, 1983).

2.3.3 Key Contingency Factors Influencing the Implementation of ABC/ABB

It was found that key contingency factors affecting changes in traditional cost accounting practices by ABC, consisted of the external environment (Anderson, 1995; Anderson et al., 2002; Arnaboldi & Lapsley, 2005; Vieira & Hoskin, 2005), technology (Anderson, 1995; Askarany et al., 2007; Krumwiede, 1998), organisational structure (Anderson, 1995; Gosselin, 1997; Kallunki & Silvola, 2008; Liu & Pan, 2007), organisational strategy (Arnaboldi & Lapsley, 2005; Gosselin, 1997; Kallunki & Silvola, 2008), organisational size (Baird et al., 2004; Brierley, 2008; Innes & Mitchell, 1995; Kallunki & Silvola, 2008; Krumwiede, 1998), and culture (Baird et al., 2004; Eldenburg et al., 2010; Fei & Isa, 2010a; Morakul & Wu, 2001). The authors and researches listed previously used Contingency Theory in their work.
2.3.3.1 Contingency Factors Influencing the Implementation of ABC

- The external environment

According to the findings of Lawrence and Lorsch (1967) and Thompson (1967), it is apparent that external environments play an important role in changing the form of organisations. The external or task environments are also identified as important factors influencing the development of management accounting practices (Gordon & Miller, 1976; Khandwalla, 1972). Since the 1960s, environmental variables have been identified by many researchers as representing uncertainty as a stable-dynamic (Lawrence & Lorsch, 1967; Waterhouse & Tiessen, 1978). Gordon and Miller (1976) categorised environmental variables into three dimensions: dynamic, heterogeneous and hostile. They described the dynamic environment as rapid and unpredictable and responsible for changes in customer satisfaction, the increase in new technologies and the introduction of new products by competitors. The heterogeneous environment was identified as a different market, with different products and technologies. The hostile environment results from the threatening actions of competitors or shortages of resources due to strikes, government regulations or credit squeezes. Khandwalla (1977) provided a useful taxonomy of environmental variables which include turbulence (risky, unpredictable, fluctuating, ambiguous), hostility (stressful, dominating, restrictive), diversity (variety of products, inputs, customers), complexity (rapidly developing technologies) and restrictive (high coercive orientation). Chenhall (2003) reviewed previous studies and described three main environmental attributes that are dynamic, hostile and complex.

Changes to the external environment that were found to influence the implementation of ABC are competition and government policy. Competition is described as an important factor influencing the development of costing systems. In a competitive environment, firms need reliable cost information because competitors will exploit costing mistakes (Cooper & Kaplan, 1988). Khandwalla (1972) found that different types of competition have different impacts on the use of management controls in manufacturing organisations. Competition includes price, distribution and product competition. To shift traditional costing to ABC, competition is important in facilitating its adaptation.
(Anderson, 1995). Competition also affects the complexity of the ABC model its design
(Anderson et al., 2002; Arnaboldi & Lapsley, 2005). Vieira and Hoskin (2005) found
that the competitive environment and marketing forced a Portuguese bank to implement
an ABC system. The use of ABC in Finland studied by Kallunki and Silvola (2008)
show that a dynamic environment (product diversification and marketing) forced
businesses to change their organisational structure. As a result, there are differences in
the use of ABC across the organisation’s life cycle phases.

**Government policy** is important in encouraging the growth of productivity by
establishing microeconomic rules and incentives to control competition (Porter, 2008).
The objectives of rules and incentives are to increase rivalry through competition,
provide a fair tax system and effective intellectual property laws. These initiatives
encourage investment; provide a fair and efficient legal system, laws that enable
consumer alternatives and corporate governance that hold managers accountable for
performance. The government, through legislation and sanctions encourages integrated
financial accounting legislation that affects firms’ accounting practices (Granlund &
Lukka, 1998). Integration and uniformity are also needed when negotiating and
implementing international trade agreements (Hopper & Major, 2007). In the late 1990s,
the European Commission endorsed full and fair competition between operators
through the market liberalisation of EU telecommunications (Hopper & Major, 2007).
Moreover, in the Interconnection in a Liberalised Telecommunications Market: Part 1 –
Interconnection Pricing, the European Commission recommended that operators use
ABC for calculating interconnection charges instead of distributed historic cost (Hopper
& Major, 2007). From the findings, Governments enhanced the competitive
environment and also influenced changes in the costing practices of organisations.

- **Technology**

Technology can be defined as an external and internal factor. Since the 1960s,
technology was seen in terms of production technology (Gordon & Miller, 1976;
Lawrence & Lorsch, 1967; Perrow, 1967; Woodward, 1958). It was categorised into
three different sets: unit production, mass production and process production
(Woodward, 1958); routine and non-routine (Perrow, 1967), and the stable and dynamic
paradigm (Lawrence & Lorsch, 1967). Khanwalla (1977) argues that technology should be classified into two categories that are production or operational and information processing. He asserts that production technology effects organisational structure and increases job dissatisfaction because it raises needs awareness. He found that large firms, which are more technological complex, make more use of electronic data processing systems. Different electronic data processing systems can facilitate decentralisation and enable rapid retrieval of information that can be easily integrated into the decision-making process.

Bruggeman and Slagmulder (1995) state that new production technology is a crucial factor for change in cost structure (e.g. an increase in indirect costs). Firms might reanalyse suitable cost drivers for cost allocation and ABC is as a method for handling this task (Kaplan & Cooper, 1998b). Anderson (1995) claims that the complexity of technology is a determining key factor in the implementation of ABC and furthermore, a robust Information Technology (IT) system is required for that process (Krumwiede, 1998). Moreover, IT affects competition by changing industry structure, creating competitive advantage and establishing new businesses (Porter, 2008). The study by Askarany et al. (2007) claims that technological change in manufacturing practices were responsible for the implementation of ABC by Australian plastics and chemical industries.

- Organisational Strategy

Chandler (1962) describes the changing strategy of American industrial enterprises as they responded to the dynamic market at the 1970s and the four business strategies used were consolidation, integration, diversification and initial growth. Miles et al. (1978) described an adaptive process based on types of organisational strategy: defenders, analysers, prospectors and reactors. They found for example, that the defender developed a single core technology in order to maintain a small niche within the industry and achieved control through a mechanistic structure. The prospector strategy required flexibility in its technology and administrative system for finding and exploiting new products and market opportunities. In order to achieve this goal, the prospector organised firms through the organic structure.
Chenhall and Langfield-Smith (1998) examined how the combination of management techniques and management accounting practices enhanced the performance of Australian organisations through the design of specific strategic priorities. The three organisational strategies described by Porter (2008) were differentiation, cost, and leadership and focus. The combination of activity-based systems and management strategies, such as improving existing manufacturing processes and stimulating innovation, were identified as important characteristics for high performing firms that emphasised product differentiation strategies. However, the combination of activity-based systems and traditional accounting standards were perceived as low price strategies that were beneficial to increased organisational performance (Innes & Mitchell, 1995; Kennedy & Affleck-Graves, 2001).

Organisational strategy does not affect only organisational structure, but also changes to management accounting practices. Firms with different strategies will have different cost management systems. Porter (2008) claims that five competitive elements shape organisational strategy and these are new market entrants, the power of suppliers and buyers, substitutes and existing competitors. Organisational components such as products and services, equipment, employee behaviour and skills, and management systems are based on the organisational strategy of each company (Porter, 2008). Therefore, organisational strategy does not affect only organisational structure, but also the change of management accounting practices.

Firms with different strategies will have different cost management systems. Porter (2008) defined generic strategies which are differentiation, cost leadership and focus to represent alternative strategic positions in an industry. Although the generic strategies were introduced during the 1980s, they have remained useful tools to clarify strategic positions at the simplest and broadest level. Porter (1996) argues that firms aiming at cost leadership need more sophisticated product costs than firms competing at product differentiation level. Whereas Gosselin (1997), found that firms using product differentiation strategy are advised to adopt ABM. Moreover, the combination of activity-based systems and management strategies, such as improving processes and manufacturing system innovations, were important for high performing firms that emphasised product differentiation (Chenhall & Langfield-Smith, 1998).
Organisational Structure

A pioneer study of organisational structure was undertaken by Burns and Stalker (1961) and it classified organisational structure as either mechanistic or organic. Apart from the classification of organisational structure proposed by researchers in the 1960s, organisational structure was also classified in terms of centralisation and decentralisation (Bruns & Waterhouse, 1975; Gordon & Miller, 1976; Waterhouse & Tiessen, 1978). Gordon and Miller state that decentralisation could take the form of divisional and/or departmentalisation as proposed by Chandler (1962). Ginzberg (1980) combines forms of organisational structure proposed by Chandler (1962) and Lawrence and Lorsch (1967) into four categories: differentiation, centralisation, integration, and bureaucratic. The mechanistic structure represents hierarchical control, authoritarian channels of communication, functional strategies and a high level of centralisation and formalisation (Donaldson, 2005). The organic structure has a minimal hierarchy, specialisation of functions and thrives on the power of personalities, flexible procedures and communication. This type of structure can react quickly and easily to changes in the environment (Donaldson, 2005).

Otley (1980) states that organisational structure has an effect on accounting system functions. Chenhall and Morris (1986) point out that decentralisation is one form of structure that distributes power to managers to plan and control actions and access information. It also increases the opportunity for changing or developing new management accounting practice. Conversely, Anderson (1995) found that centralisation can facilitate a unique form of ABC system adaptation. The mechanistic structure, that has a higher level of centralisation and formalisation than the organic structure, is likely to be more successful in implementing ABC (Gosselin, 1997). The hierarchical command and communication structure that is found in Chinese firms helps to transfer ABC concepts effectively across the organisation (Liu & Pan, 2007). The result of surveys about the use of ABC in Finnish firms shows that a bureaucratic organisational structure can use the ABC system for the duration of its life cycle. (Kallunki & Silvola, 2008).
• **Organisational Size**

Khandwalla (1977) states that a large organisation has more divisional and departmental units and complex activities. It emphasises formalisation of procedures, tends to be more bureaucratic, and uses sophisticated control and information systems (Donaldson, 2001; Khandwalla, 1977). Merchant (1981) maintains that a large decentralised firm is likely to make high use of formal administration. Jones (1985b) claims that organisational size places a different emphasis on management accounting techniques. This means a large firm could use a wide range of Management Accounting Systems (MAS) and more sophisticated techniques to assist organisational integration. The findings from the studies of management accounting practices in countries such as Estonia (Haldma & Lääts, 2002), England (Abdel-Kader & Luther, 2008) and Italy (Carenzo & Turolla, 2010) confirm that organisational size has an effect on the implementation of management accounting practices.

Chenhall (2003) agrees with findings of previous studies that large firms tend to have more power in controlling their operational environment by employing sophisticated management techniques in order to reduce uncertainty. Thus, organisational size, especially that of a large organisation, is an important determinant in the decision to adopt ABC (Baird *et al.*, 2004; Brierley, 2008; Kallunki & Silvola, 2008; Krumwiede, 1998). Since ABC has been used by several large companies in the USA, the UK and Europe (Banker *et al.*, 2008; Bjørmenak, 1997; Clarke *et al.*, 1999; Foster & Swenson, 1997; Innes *et al.*, 2000; Kennedy & Affleck-Graves, 2001), large Thai manufacturing firms have seen the potential of including it into their current cost management systems.

• **Organisational Culture**

Culture has been divided into two parts: national and organisational. Differences between cultures can lead to disparate behaviour and perceptions (Hofstede, 1983). Hofstede (1983) investigates the reason nationality is important to management in a survey of 50 countries and identified four cultural traits: individualism, collectivism, power distance, and uncertainty avoidance. However, Baskerville (2003) disagrees with Hofstede’s study that culture does not represent the collective. He asserts that Hofstede fails to quantify culture through numeric dimensions and metrics. Moreover, Hofstede
did not use the cultural dimension to describe the characteristics of different national characteristics. Although Hofstede’s study has been criticised, his classification of national cultures is still widely used. Many researchers believe culture can bring about change to management accounting techniques. Harrison (1992) examines the cross-national effects of participation between budget emphasis and subordinate work-related attitudes. The findings show that the cross-cultural mix of Singapore and Australia will lead to a shift in the design of some aspects of management accounting systems.

Organisational culture is:

“The mindset of employees, including their shared beliefs, values, and goals” (Shields & Young, 1989, p. 18).

Consistent with the pattern of collective behaviour, new organisational members are inducted into the company way of perceiving, thinking and feeling (Ravasi & Schultz, 2006). Shields and Young (1989) believe that organisational culture impacts employees’ behaviour about the continuous improvement of cost management systems. Ravasi, and Schultz (2006) found that organisational culture could be created through shared external images, internal communication about collective history, organisational symbols and consolidated practices. Organisational culture affects the way employees interact with each other, with clients and with stakeholders.

Moreover, national culture affects organisational culture. National culture is inherent in daily life and therefore automatically included in workplace practices (Maneerat et al., 2005; Thanasankit & Corbitt, 2002). Hofstede (1984) asserts that different cultures, have different ways of using management techniques to allocate resources and solve problems.

Culture differences influence the implementation of ABC. Brewer (1998) described the results of ABC implementation in Malaysian and American plants. He found that Malaysian plants implemented it more successfully than their American counterpart because of culture differences. A study conducted in Thailand, Morakul and Wu (2001) agreed that national culture influenced ABC implementation. The researchers found that the level of resistance to the implementation in three Thai State enterprises was
higher than in the USA due to cultural differences and recommended that a successful
implementation process needs to include unique cultural characteristics.

Moreover, aspects of organisational culture were found to affect the adoption and
implementation of ABC. Ansari and Lawrence (1999) assert that a costing system
reflects and underpins organisational culture and Skinner (1998) claims that the failure
of ABC is a result of an unsympathetic organisational culture.

Most problems affecting ABC implementation success come from resistance within the
organisation (Malmi, 1997). Companies in Portugal (Major & Hopper, 2005; Vieira &
Hoskin, 2005), Finland (Malmi, 1997) and the UK (Ezzamel et al., 2004) experienced
resistance during the implementation process. Resistance was caused by anxiety due to
loss of control, the stress of new processes, and increased accountability from the plant
managers and workers (Norkiewicz, 1994). Baird et al. (2007) found that organisational
culture is a major factor in the success or failure of the ABC implementation process.

Baird et al. (2004) identified the characteristics of organisational culture that influence
the adoption of ABM. They found that an innovative corporate culture includes
receptivity and adaptability to change and is integral to management decision-making
during the initial stages; outcome focused orientation underpins a successful ABC
implementation (Baird et al., 2007). Chongruksut (2009) examined the relationship
between organisational culture and the adoption of management accounting practices in
Thailand. Her study supports the assertion that firms with a culture that encourages
teamwork, participation and openness to change have a higher success potential for
implementing innovative management accounting systems.

2.3.3.2 Contingency Factors Influencing the Implementation of ABB

The contingency factors that affect changes from traditional budgeting systems to ABB
are competition, technology, organisational structure, strategy and culture.

- **Competition**

Competition is an important factor influencing the development of costing systems.
Competitive pressure caused by global competition, rapid growth of commercial
technology and customer demand lead to the use of new management techniques (Bunce et al., 1995). In a changeable and competitive market, firms need effective management tools and systems that provide accurate and timely information (Liu et al., 2003; Sandison et al., 2003). In a highly competitive environment, firms need to budget for the communication of goal identification and strategy planning, but not for performance evaluation (Hansen & Stede, 2004). Liu et al. (2003) conducted an exploration of the ABB experiences at a major UK brewery that stated implemented ABC in response to continual pressure from supermarkets for price reductions. Moreover, ABB was a part of the ABC implementation project.

- **Technology**

Block and Carr (1999), investigated the adoption of ABB by an American digital semiconducting company and found changes in dynamic technology led to pressure for higher profits. The company adopted ABB for better pricing decisions. Moreover, IT was found as a support tool in the implementation of ABB. Mason (1996) tested the use of Cost Control software to develop an intelligent ABB system at Scottish Courage Brewing Ltd. and claims that the software assists firms to reduce costs and time in the budget production process.

- **Organisational strategy**

Organisational strategy is the starting point for the ABB process and includes the business process, activities and features (Brimson & Antos, 1999; Sandison et al., 2003). Simons (1990) found firms that have a prospector strategy (which is similar to a differentiation strategy) use budgetary controls more than defenders who use a strategy similar to cost leadership.

- **Organisational Structure**

In decentralised firms, the budget is an important organisational mechanism to translate strategy into action, monitor the financial impact of actions in line with strategy, and adjust strategy to financial results relative to the corporate plan (Gul & Chia, 1994). In the ABB process, the bottom-up approach is preferred for preparing reports because the process requires involvement from lower level employees (Bunce et al., 1995; Player,
Therefore, the organic structure with its minimal hierarchy, specialisation of functions, flexible procedures and communication that thrives on the power of personalities, is needed for the implementation of ABB. Bunce et al. (1995) found that it was difficult to implement ABB in firms which have a formal organisational structure and hierarchical processes (mechanisms). Moreover, Liu et al. (2003) assert that changes in organisational structure lead to changes in the ABB system.

- **Organisational Culture**

Bunce et al. (1995) claim that congruent behaviour found in teamwork and organisational learning culture supports the implementation of ABB. ABB requires involvement from employees to formulate and communicate strategic plans and in that context a teamwork culture is important (Player, 2004). During the implementation of ABB in the UK brewery, it was difficult to prepare and negotiate the budget because managers did not appreciate the use of a non-value added approach (Liu et al., 2003). This confirms Hofstede’s (2007) assertion that the successful implementation of management techniques always comes down to people.

### 2.4 IDENTIFICATION OF AREA FOR FURTHER RESEARCH

Literature related to factors influencing the implementation of ABC can be classified into two main groups. The first group focuses on identifying contextual, organisational and behavioural factors which motivate the adoption of ABC and affect its design system. The second group focuses on organisational and behavioural factors which assist companies to implement ABC successfully. Furthermore, these studies identify factors through a qualitative investigation of ABC implementation processes or surveys.

As shown in Table 2-2 and 2-3, three main research gaps were found. Firstly, most studies have been conducted in developed economies (see Table 2-2) rather than developing economies (see Table 2-3). The first ABC research was conducted on US manufacturers and further studies have been conducted in Britain (Al-Omiri & Drury, 2007; Arnaboldi & Lapsley, 2005; Bhimani & Pigott, 1992; Brierley, 2008; Ezzamel et al., 2004; Innes & Mitchell, 1993; Innes & Mitchell, 1995; Innes et al., 2000; Soin et al.,
2002), the USA (Anderson, 1995; Anderson et al., 2002; Anderson & Young, 1999; Brewer, 1998; Foster & Swenson, 1997; Ittner et al., 2002; Krumwiede, 1998; McGowan & Klammer, 1997; Shields, 1995), Australia (Askarany et al., 2007; Baird et al., 2007; Baird et al., 2004; Drennan & Kelly, 2002), Canada (Gosselin, 1997), Portugal (Major & Hopper, 2005; Vieira & Hoskin, 2005) and Finland (Kallunki & Silvola, 2008; Malmi, 1997).

Fewer studies have been conducted in developing economies such as China (Fei & Isa, 2010a; Liu & Pan, 2007), Taiwan (Eldenburg et al., 2010; Lee et al., 2010), Malaysia (Maelah & Ibrahim, 2007; Majid & Sulaiman, 2008), Thailand (Chongruksut, 2002; Chongruksut & Brooks, 2006; Morakul & Wu, 2001; Tupmongkol, 2008), South Africa (Sartorius et al., 2007), Saudi Arabia (Al-Omiri, 2012; Khalid, 2005), and Iran (Ahmadzadeh et al., 2011).

Table 2-2: A summary of studies related to the implementation of ABC divided by the three main objectives in developed countries

<table>
<thead>
<tr>
<th>Author</th>
<th>Method</th>
<th>Country</th>
<th>Objectives of studies</th>
<th>To identify factors influencing the implementation of ABC</th>
<th>To identify factors influencing the ABC implementation success</th>
<th>To investigate process of ABC implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bhimani and Pigott (1992)</td>
<td>Case study</td>
<td>UK</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Does not identify the stages of implementation</td>
</tr>
<tr>
<td>Innes and Mitchell (1993)</td>
<td>Case study</td>
<td>UK</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>The origin of ABC</td>
</tr>
<tr>
<td>Innes and Mitchell (1995)</td>
<td>Survey</td>
<td>UK</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Planning and gathering data</td>
</tr>
<tr>
<td>Friedman and Lyne (1999)</td>
<td>Case study</td>
<td>UK</td>
<td>-</td>
<td>✓</td>
<td>-</td>
<td>Initiation and adoption</td>
</tr>
<tr>
<td>Innes and Mitchell (2000)</td>
<td>Survey</td>
<td>UK</td>
<td>-</td>
<td>✓</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Ezzamel et al. (2004)</td>
<td>Case study</td>
<td>UK</td>
<td>✓</td>
<td>✓</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Arnaboldi and Lapsley (2005)</td>
<td>Case study</td>
<td>UK</td>
<td>✓</td>
<td>✓</td>
<td>-</td>
<td>Initiation and adoption</td>
</tr>
<tr>
<td>Al-Omri and Drury (2007)</td>
<td>Survey</td>
<td>UK</td>
<td>✓</td>
<td>✓</td>
<td>-</td>
<td>Initiation and adoption</td>
</tr>
<tr>
<td>Brierley (2008)</td>
<td>Survey</td>
<td>UK</td>
<td>✓</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Shields (1995)</td>
<td>Survey</td>
<td>USA</td>
<td>-</td>
<td>✓</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Anderson (1995)</td>
<td>Case study</td>
<td>USA</td>
<td>✓</td>
<td>✓</td>
<td>-</td>
<td>Initiation</td>
</tr>
<tr>
<td>Foster and Swenson (1997)</td>
<td>Survey</td>
<td>USA</td>
<td>-</td>
<td>✓</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Author</td>
<td>Method</td>
<td>Country</td>
<td>To identify factors influencing the implementation of ABC</td>
<td>To identify factors influencing ABC implementation success</td>
<td>To investigate process of ABC implementation</td>
<td></td>
</tr>
<tr>
<td>------------------------------</td>
<td>-------------------------</td>
<td>------------------</td>
<td>--------------------------------------------------------</td>
<td>--------------------------------------------------------</td>
<td>---------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>McGowan &amp; Klammer (1998)</td>
<td>Survey</td>
<td>USA</td>
<td>-</td>
<td>✓</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Krumwiede (1998)</td>
<td>Survey</td>
<td>USA</td>
<td>✓</td>
<td>✓</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Anderson and Young (1999)</td>
<td>Survey &amp; Interview</td>
<td>USA</td>
<td>-</td>
<td>✓</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Ittner et al. (2002)</td>
<td>Survey</td>
<td>USA</td>
<td>✓</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Gosselin (1997)</td>
<td>Survey</td>
<td>Canada</td>
<td>✓</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Malmi (1997)</td>
<td>Case study</td>
<td>Finland</td>
<td>✓</td>
<td>✓</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Kallunki and Silvola (2008)</td>
<td>Survey</td>
<td>Finland</td>
<td>✓</td>
<td>-</td>
<td>Use of information</td>
<td></td>
</tr>
<tr>
<td>Baird et al. (2004)</td>
<td>Survey</td>
<td>Australia</td>
<td>✓</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Askarany et al. (2007)</td>
<td>Survey</td>
<td>Australia</td>
<td>✓</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Baird et al. (2007)</td>
<td>Survey</td>
<td>Australia</td>
<td>-</td>
<td>✓</td>
<td>Implementation</td>
<td></td>
</tr>
<tr>
<td>Vieira and Hoskin (2005)</td>
<td>Case study</td>
<td>Portugal</td>
<td>✓</td>
<td>✓</td>
<td>Does not identify the stages of implementation</td>
<td></td>
</tr>
<tr>
<td>Major and Hopper (2005)</td>
<td>Case study</td>
<td>Portugal</td>
<td>✓</td>
<td>✓</td>
<td>Does not identify the stages of implementation</td>
<td></td>
</tr>
<tr>
<td>Brewer (1998)</td>
<td>Survey &amp; interviews</td>
<td>Malaysia &amp; USA</td>
<td>✓</td>
<td>✓</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

Table 2-3: A summary of studies related to the implementation of ABC divided by the three main objectives in developing economies
Secondly, most ABC studies were based on surveys that lack an in-depth explanation of the process of implementation including an understanding of techniques and an explanation of the interrelationship between factors. These omissions obstruct the discovery of hidden factors that influence the implementation of ABC. Moreover, most studies fail to describe the complete process of implementation and instead, emphasise a few stages that provides insufficient information for practitioners.

Thirdly, the literature is largely quantitative in nature. Most studies fail to discuss the theoretical background and hence the research suffers from lack of a framework and points of reference. Factors used as hypothesis for the studies were not referenced against relevant theories. An exception is Anderson (1995) who conducted a two-part qualitative study to develop contingency variables for further empirical research.

Arnaboldi and Lapsley (2005) suggest qualitative case study research would provide deeper understanding about the complex interaction between contextual, organisational and behavioural factors and their interrelationship at the different implementation stages.

Moreover, factors such as culture, management styles, competitive environment and government policy in developing economies are different from those of developed economies (Hofstede, 2007; Hopper & Major, 2007) and might result in different influences on the stages of the implementation process. Part 2 of this chapter explores these issues and the background literature in more detail.

Furthermore, the literature related to the adoption and implementation of ABB is reviewed. The studies relating to the implementation of ABB were conducted in the UK, America and Bahrain and are analysed in Table 2-4, and among them are qualitative case studies that discuss the process. However, none of the studies identify factors that influence the implementation. Moreover, although ABB has been implemented in some Asian countries, there are not any studies about the process apart from Bahrain.
Table 2-4: A summary of studies related to ABB

<table>
<thead>
<tr>
<th>Author</th>
<th>Objective</th>
<th>Method</th>
<th>Country</th>
<th>Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bunce et al. (1995)</td>
<td>To summarise a journey that has been taken the CAM-I advanced management system program’s Advanced Budgeting study group.</td>
<td>Case study</td>
<td>UK</td>
<td>Bank, demand chain management, computer and printer company</td>
</tr>
<tr>
<td>Mason (1996)</td>
<td>To describe the ABB at Scottish Courage Brewing Ltd. Using cost control software from Quality Production and Research Ltd.</td>
<td>Case study</td>
<td>UK</td>
<td>Brewery company</td>
</tr>
<tr>
<td>Block and Carr (1999)</td>
<td>To investigate the adoption of ABB by Digital Semiconductor</td>
<td>Case study</td>
<td>US</td>
<td>Digital Semiconductor</td>
</tr>
<tr>
<td>Joshi et al. (2003)</td>
<td>To examine budget planning in terms of implementation and performance evaluation practices</td>
<td>Survey</td>
<td>Bahrain</td>
<td>Banking, investment, insurance, services, industrial, hotel and tourism</td>
</tr>
<tr>
<td>Liu et al. (2003)</td>
<td>To explore the ABB experiences of a major UK brewer</td>
<td>Case study</td>
<td>UK</td>
<td>Brewery company</td>
</tr>
<tr>
<td>Shane (2005)</td>
<td>To analyse a hypothetical police precinct and the activities of the patrol force through the ABB concept</td>
<td>Case study based quantitative approach</td>
<td>Not identify</td>
<td>Police department</td>
</tr>
<tr>
<td>Hansen (2011)</td>
<td>To investigate the organisation-wide (operational planning and performance evaluation) effects of three different budgeting alternatives including rolling budgeting, ABB and beyond budgeting</td>
<td>Theoretical analysis using a stylised mathematical model</td>
<td>Not identify</td>
<td>Not identify</td>
</tr>
</tbody>
</table>
PART 2: THE ADOPTION AND IMPLEMENTATION OF ABC IN DEVELOPING ECONOMIES

2.5 OVERVIEW OF ABC/ABB ADOPTION IN DEVELOPING ECONOMIES

2.5.1 ABC Adopting in Developing economies

2.5.1.1 ABC adoption in China, Taiwan and Malaysia

ABC has been implemented in several developing economies such as Malaysia, China, Taiwan and Thailand. ABC knowledge is transferred from the West to developing economies due to the globalisation of academic, professional and business institutions, and the influence of international organisation such as the World Bank and the United Nations Development Programme (UNDP) (Alawattage et al., 2007). This includes the transfer of accounting techniques such as ABC.

Two Malaysian-based semiconductor manufacturers, studied by Brewer (1998) and Majid and Sulaiman (2008), were directed to implement ABC by their parent companies in America and due to the cost of competition in the industry, it was implemented across all plants. Brewer (1998) found that the different cultural paradigms between America and Malaysia affected ABC success indicators. Malaysian culture, which has high power distance and a collectivist ethos had consistently greater ABC success than its American counterpart which has low power distance and is individualistic. He concluded that the top-down approach contributed to a higher level of ABC success. Majid and Sulaiman (2008) found that top management support is the most important factor in successful implementation.

As a result of global competition, ABC was implemented in developing economies. Due to market competition, a large Chinese manufacturing company (Liu & Pan, 2007) and large Taiwanese manufacturing companies (Fei & Isa, 2010b) identified the need for an effective costing system. ABC became an attractive costing technique among Chinese academics and practitioners due to the widespread coverage of the concept in
Chinese management accounting textbooks (Liu & Pan, 2007). Moreover, Liu and Pan (2007) emphasised that top-down encouragement of ABC implementation helped to disseminate the concept across the organisation. Moreover, organisational culture was found to influence the use of information by Taiwan’s largest hospital (Eldenburg et al., 2010).

A multinational Malaysian telecommunications company implemented ABC through pricing competition (Majid & Sulaiman, 2008) which was the same driver faced by Chinese and Taiwan manufacturing companies. These three studies found top management was the crucial factor influencing its successful implementation. External consultants were also important to the Chinese manufacturing company (Liu & Pan, 2007) and competitive strategy and systems training were essential to the Malaysian telecommunications company (Majid & Sulaiman, 2008).

2.5.1.2 ABC adoption in Thailand

As a consequence of the economic crisis of 1997, ABC was disseminated throughout Thailand by American companies (Chongruksut, 2002). Thai companies adopted ABC as they needed effective cost systems in response to the competitive environment that included foreign competitors and parent companies. Morakul and Wu (2001) and Tupmongkol (2008) studied the implementation of ABC in Thai State enterprises and Morakul and Wu (2001) believed that national culture influenced its implementation. They found that the level of resistance to the implementation of ABC in three Thai State enterprises was higher than in the USA due to cultural differences. Therefore, they suggested that State enterprises needed to adapt the implementation process to fit Thai cultural paradigms and thereby reduce the level of resistance. Tupmongkol (2008) identified the factors that resulted in a successful implementation by Thai State enterprises were top management, resources, training, the ABC team, clear objectives and an efficient process.

Moreover, Chongruksut (2002) used organisational theory to explain the process of ABC adoption. This study found the economic crisis to be a significant variable in building organisational learning among Thai companies. Behavioural and organisational variables were crucial in creating in-house learning opportunities among
leading Thai companies during the implementation process. The study by Chongruksut and Brooks (2006), used a questionnaire survey and found that the main reasons for ABC implementation were the growth of competition and the limitations of traditional cost accounting. ABC users in Thailand agreed that top management support was the key to a successful implementation.

2.5.2 Identification of ABC/ABB Adoption in developing economies

As described in the previous sections, ABC studies in developing economies provide superficial explanations about case site implementation success and are predominantly quantitative in nature (see Table 2-2). Evidence of this critique can be found in the three cited case studies conducted in China (Liu & Pan, 2007), Malaysia (Majid & Sulaiman, 2008) and Thailand (Tupmongkol, 2008).

Moreover, these studies focus on the factors influencing the initiation and adoption stage. There is a lack of identifying factors present in latter part of the process such as the design and the use of information stages. Only Majid and Sulaiman (2008), describe the factors that influence the entire process. They include factors such as efficiency, choice, force, fad or fashion and emphasise the motivation for the first stage of ABC implementation which is the initiation and adoption.

Literature about the theoretical background is limited. Factors identified by relevant studies do not refer to any theoretical discourse including contingency theory. However, some factors were simplistically identified as contingency factors but omitted describing the theory as a critical part of the process. Only two case studies considered the impact of national culture (Morakul & Wu, 2001) and organisational structure (Liu & Pan, 2007) on implementation. These two studies investigated single factors but ignored others that could influence the implementation of ABC and the relationship between factors.

In the following section, the role of contingency factors in management control and accounting system implementation in developing economies is discussed in more detail.
2.6 CONTINGENCY FACTORS IN DEVELOPING ECONOMIES

Depending on the country, the seven contingency factors described in Part 1 influence the implementation of ABC differently. Table 2-5 shows the classification of the seven contingency factors by countries.

**Competition** is probably the most important factor in the decision to implement ABC in developed and developing economies. However, the literature does not provide a comprehensive explanation of the effect of competition on the implementation process. Competitive motivation and influence change dependent of the environment in which they exist and function. Government policy, technology, customers and suppliers influence competition. For example, competition in the EU telecommunications market was influenced by market liberalisation (Hopper & Major, 2007) and in the Malaysian telecommunications market, it was affected by pricing competition and rapid changes in mobile technology.

**Government policy** influenced the adoption of ABC in developed economies such as Portugal and the USA. Portuguese Government policy directly influenced the adoption of ABC by telecommunications companies. In contrast, American Government policy indirectly influenced the adoption of ABC through competition.

**Technology** was more relevant to the adoption of ABC in developed economies. The introduction of advanced manufacturing technology in the 1980s in the USA and the UK led to the development and adoption of ABC towards the end of that decade. (Jones & Dugdale, 2002) ABC was adopted in Thailand in 1997 after the Asian financial crisis that Chongruksut (2002) asserts resulted in an increase in the use of new technologies. These new technologies increased commercial competency and influenced Thai companies to adopt ABC.

**Organisational strategy** however, was found to be an important factor for the adoption of ABC in developed economies. None of the studies found organisational strategy played a role in the decision to adopt ABC in developing economies.
Table 2-5: Contingency factors influencing the implementation of ABC found in different countries

<table>
<thead>
<tr>
<th>Developed Countries</th>
<th>Competition</th>
<th>Government Policy</th>
<th>Technology</th>
<th>Size</th>
<th>Organisational strategy</th>
<th>Organisational structure</th>
<th>Organisational culture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>(Askarany et al., 2007)</td>
<td>(Kallunki &amp; Silvola, 2008)</td>
<td>(Kallunki &amp; Silvola, 2008)</td>
<td>(Kallunki &amp; Silvola, 2008)</td>
<td>(Baird et al., 2007; Baird et al., 2004)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>(Gosselin, 1997)</td>
<td>(Gosselin, 1997)</td>
<td>(Gosselin, 1997)</td>
<td>(Gosselin, 1997)</td>
<td>(Gosselin, 1997)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developing economies</td>
<td>Competition</td>
<td>Government Policy</td>
<td>Technology</td>
<td>Size</td>
<td>Organisational strategy</td>
<td>Organisational structure</td>
<td>Organisational culture</td>
</tr>
<tr>
<td>China</td>
<td>(Fei &amp; Isa, 2010a)</td>
<td>(Fei &amp; Isa, 2010a)</td>
<td>(Fei &amp; Isa, 2010a)</td>
<td>(Fei &amp; Isa, 2010a)</td>
<td>(Fei &amp; Isa, 2010a)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iran</td>
<td>(Ahmadzadeh et al., 2011)</td>
<td>(Ahmadzadeh et al., 2011)</td>
<td>(Ahmadzadeh et al., 2011)</td>
<td>(Ahmadzadeh et al., 2011)</td>
<td>(Ahmadzadeh et al., 2011)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Organisational structure** was important to the implementation in developed economies such as the USA, Finland and Canada. Anderson (1995) and Gosselin (1997) stated that a mechanistic structure enables companies to implement ABC more successfully than an organic structure. Liu & Pan’s finding (2007) endorses the findings by Anderson (1995) and Gosselin (1997) that a mechanism structure enabled a Chinese company to communicate the ABC concept effectively across its organisation.

**Organisational culture** influenced the implementation process in several countries, but not in the USA, Canada, Saudi Arabia and Iran. Brewer (1998) described the results of ABC implementation in Malaysian and American plants and found that the Malaysian plant implemented ABC more successfully than its American counterpart due to cultural differences. However, the implementation of ABC in Thai State enterprises experienced more resistance than in the USA due to cultural differences (Morakul & Wu, 2001).

Based on Hofstede’s studies, Western and Asian cultures have five different dimensions (Hofstede, 2007). *Western culture* is individualistic, has small power distances, weak uncertainty avoidance, high masculinity and short term orientation; conversely, *Asian culture* is collectivist, large power distances, strong uncertainty avoidance, low masculinity and long term orientation. Westerners have an independent culture that expects them to be self-motivated and base their actions on free will and self-determination. Consequently, business relationships are based on equal status between employers and employees and favour low power distance (Hofstede, 1984). In a high masculine culture, competitiveness is seen as positive: the effective person deserves to win. Innovative ideas and unique abilities are encouraged and as new ideas emerge frequently, there is high tolerance of individualistic behaviour and non-conformity. Moreover, negative emotions are easily expressed and there is minimal concern for future uncertainty.

In contrast, Asia is a dependent culture where social structure is based on the paradigm of the family. Respect is paid to people of higher status that is defined in terms of material wealth, career position and educational attainment. Therefore, employees respect their employers and there is less resistance to direction in the interests of
avoiding future uncertainty. Employees are tolerant in the work place and prefer to hide negative emotions in the interests of securing high work security and stability.

Due to cultural differences, when new costing systems such as ABC were introduced more resistance occurred in Western organisations (Ezzamel et al., 2004; Major & Hopper, 2005; Malmi, 1997; Vieira & Hoskin, 2005) than in Asia. ABC was presented as an effective costing tool that would benefit the company by reducing costs. However, workers believed the cost cutting potential benefited management as less people were needed to perform the work (Ezzamel et al., 2004). According to Hofstede, Western opposition to the implementation of ABC was expressed through opinions and actions as determined by cultural identity.

Based on the findings explained above, culture is likely to influence the implementation of ABC and ABB. As Thai culture is an Asian culture its unique cultural characteristics could influence the implementation of ABC. As with collectivist culture, Thai people are integrated into strong groupings that protect them throughout their lifetime, thus high loyalty is generated towards the collective entity (Hofstede, 1984, 2007). Pimpa (2012) found that the younger generation in the Thai public sector is collectivist because they need to rely upon the support of the leader. Thais prefer to behave in accordance with the group’s standard which links to the concept of large power distance and respect for culture. Komin (1990) describes the Thai social system as hierarchical; young people are taught to respect their elders. In Thai organisations, Thai employees accept hierarchical command and appreciate strong leadership as the findings by Morakul and Wu (2001) describe. This characteristic helps avoid conflict in communications between supervisors, subordinates and co-workers. Sriussadaporn-Charoenngam and Jablin (1999) found that Thai employees avoid conflict with others by controlling their emotions, behaving respectfully, are tactful, modest and polite. However, Thanasankit and Corbitt (2002) state that high power distances creates an elongated organisational structure that results in protracted decision-making processes.

As a consequence of high uncertainty avoidance, Thais invest effort in the formulation of rules, laws, policies and regulations. Pimpa (2012) states avoidance of conflict and uncertainty are key characteristics in the Thai public sector system. Employees do not
wish to express their feelings and thinking which is characteristic of the power distance within organisation. Thais culture encourages non-assertive and non-competitive behaviour favouring polite, modest and conflict-free relationships (Komin, 1990). Moreover, Hofstede (2007) asserts that Asian cultures are orientated towards the long term which results in employees working in the same company for an extended period as a statement of commitment and stability (Pimpa, 2012).

2.7 SUMMARY

This chapter analyses the literature pertinent to the adoption and implementation of ABC and the theory relevant to the factors that influence the process. Moreover, the research gaps are identified for further research. The literature demonstrates that there is a lack of detailed qualitative case study that investigates the role of contingency factors in the implementation process. Furthermore, most studies omit analysis of the interrelationships between factors and the features of the ABC model further adapted after implementation to suit local needs. The literature review discusses the roles contingency factors play in different contexts. For example, different cultural characteristics and management styles could influence the implementation of ABC in different ways. To fill these research gaps, the objectives, questions and framework were identified and developed and are described in detail in the following chapter. Subsequent to the literature review, the following areas for further research were identified from the gaps in the literature. As highlighted, there is minimal work addressing in following:

General gaps in the ABC literature

- Qualitative contingency-related contributions are lacking;
- Interrelationships between contingency factors have not been established; and
- Minimal empirical evidence of extensions, such as ABB and Time Driven ABC approaches in practice.

Gaps identified in the adoption and use of ABC in developing economies
• A small body of literature suggests contingency factors operate differently in developing economies; and
• Contingency factors have not been explored throughout the varying ABC implementation phases.

The following chapter draws on this literature review to develop research questions, the research framework and theoretical approach.
CHAPTER THREE

CONCEPTUAL FRAMEWORK

3.1 INTRODUCTION

Following Chapter 2 - Literature Review, this chapter develops the research objectives, research questions and conceptual framework to help guide data collection.

In Section 3.1, the key research objectives are highlighted, along with the overarching research questions and formulation of the research boundaries from the literature review. These are further developed in Sections 3.2 - the contingency factors influencing each stage of ABC/ABB implementation in developing than developed countries, Section 3.3 - success factors proposed by Shields (1995) influence the success of ABC implementation in developing and developed countries and Section 3.4 - the design outcome of the ABC/ABB implementation process. In the following Section 3.5 the conceptual framework is developed and discussed in detail. A summary in Section 3.6 concludes this chapter.

The key research objectives identified from the gaps in the literature review are to:

- identify the different contingency factors influencing each stage of ABC implementation in large organisations;

- gain a better understanding of the contingency factors that influence ABC implementation in developing versus developed countries; and

- contribute to the contingency theory literature with a qualitative case study approach that investigates the contingency factors in practice.
As a result of these objectives, two overarching areas of enquiry are formulated.

The first overarching area of enquiry is "Do the same contingency factors hold throughout the varying stages of ABC implementation?"

The second is "Do the same contingency factors hold in developing versus developed countries?"

The literature review further provides three boundaries in which to frame this research. These are described in more detail in the following sections and relate to firstly, the contingency factors that influence each stage of ABC/ABB implementation (Section 3.2). The second area of research relates to the factors proposed by Shields (1995) that contribute and help define successful management accounting system implementation (Section 3.3). The third area of research relates to the adaptations and design outcomes of the ABC/ABB implementation process (Section 3.4).

From the three areas of literature, this study proposes the following: 1) contingency factors influence the stages of ABC/ABB implementation differently in developing and developed economies. 2) The contingency related success proposed by Shields (1995) influence the success of ABC implementation in developing economies differently to developed ones. 3) The design outcome of the ABC/ABB implementation process is different in developing and developed economies. The specific research questions are linked to Thai companies, a setting selected to explore contingency factors in ABC/ABB implementation in developing economies. Using in-depth qualitative case based approach; the field of enquiry representing developing economies are three different corporations in Thailand. The reasons for Thai case site selection will be discussed in more detail in Chapter 4.

### 3.2 CONTINGENCY FACTORS INFLUENCING ABC/ABB IMPLEMENTATION PROCESS

Contingency theory is a combination of various organisational theories; namely psychological theory, structural theory and open systems theory (Hopper & Powell,
1985). Contingency theorists believe that effective operation of organisations is dependent on a suitable match between its internal organisational settings and external environment (Hopper & Powell, 1985). Many management accounting researchers have intentionally adopted this theory to identify emerging contingency factors. Most research emphasises on the use of questionnaires to structure relevant factors, rather than exploring the management accounting processes (see Chapter 2). As strongly positivistic methodology, contingency theory in a management accounting context is argued that 1) lacks theoretical and empirical attention for key factors (Otley, 1980); 2) ignores the relationships between factors and organisational effectiveness (Otley, 1980); and 3) ignores the power of key decision-makers, values, beliefs and ideology (Hopper & Powell, 1985). Otley (1980) suggests the use of non-positivistic methodology to develop contingency theory in management accounting research. Baxter and Chua (2003) note that non-positivistic perspectives as alternative research approaches in management accounting research provide better understanding of changes in management accounting practices. In order to develop contingency theory, this study aims to understand how contingency factors influence the ABC/ABB implementation process by using qualitative approach.

3.2.1 Contingency Factors Influencing ABC Implementation Process

Anderson (1995), Arnaboldi and Lapsley (2005) and Majid and Sulaiman (2008) have identified the roles contingency factors play in each stage of ABC implementation, however, they have overlooked other contingency factors that emerged during the process as they ended to identify the success factors described by Shields (1995).

To explain the process of ABC implementation, Anderson’s (1995) was the first study to identify the stages of the process. Anderson used the six stages of IT implementation developed by Cooper and Zmud (1990) as a structure that included initiation, adoption, adaptation, acceptance, routinisation and infusion. The study investigated the first four stages of implementation by General Motors as the final two stages had not been completed.

Krumwiede (1998) listed ten stages of the implementation process which were expanded from the Cooper and Zmud (1990) model to test how contextual and
organisational factors affected each stage in an American manufacturing survey. The ten stages include non-consideration, consideration, considered then rejected, initiation, adoption, analysis, implemented then abandoned, acceptance, routine system and an integrated system. Subsequently, Arnaboldi and Lapsley (2005) identified four stages of the implementation process to explain the case of the National Health Service, Blood Transfusion Branch, UK and this model provides a comprehensive description of the process of implementation. The four stages of implementation are as follows:

- **The initiation and adoption stage** of ABC is the first stage. Firms consider and approve the decision to implement the system (Krumwiede, 1998) and appropriate the necessary resources to support it. Krumwiede (1998) found firm size influenced the decision to adopt ABC; larger firms were more likely to adopt it than smaller ones. Changes in competition and manufacturing technology are key factors that encourage companies to consider and adopt the system (Anderson, 1995; Askarany et al., 2007; Hobdy et al., 1994; Mays & Sweeney, 1994). Companies that faced intense competition were more likely to adopt ABC than companies that faced less competition (Al-Omiri & Drury, 2007). Hopper and Major (2007) stated that government policy also influenced the adoption of ABC and cites the Portuguese Telecommunications Company as an example. Another factor that affects the adoption is culture. Companies that have an innovative culture are more likely to adopt ABM than companies which have conservative cultures (Baird et al., 2004).

- **The design stage** is “the creation of an ABC system and consists of four phases: (1) activities mapping and identification; (2) the definition of resources and costs of each activity; (3) the identification of the activity drivers; (4) the final selection of the activities and drivers” (Krumwiede, 1998, p. 68). The importance of ABC design is the identification of the major activities that take place in a firm (activity analysis) and the selection of cost drivers (activity cost analysis) (Gosselin, 1997). The model becomes more complex with external consultant involved (Babad & Balachandran, 1993) and the competitive level increases (Anderson et al., 2002; Arnaboldi & Lapsley, 2005). Moreover centralisation enables companies create a unique form of ABC model (Anderson, 1995).
• **The implementation stage** is the integration of ABC into the current accounting system (Arnaboldi & Lapsley, 2005; Krumwiede, 1998). This stage includes input data collection, data calculation and accounting system revision. Krumwiede (1998) found that IT was important for the implementation of ABC as it could support the integration of systems. Moreover, Gosselin (1997) found that the mechanistic structure enabled companies to complete the implementation process. Liu and Pan (2007) state that the mechanistic structure enabled the delivery of ABC across an organisation.

• **The use of the information** is provided by the ABC information system (Arnaboldi & Lapsley, 2005) and the four main areas in which it can be used are: stock evaluation, decision-making, performance measurement, and motivation (Johnson & Kaplan, 1987). Arnaboldi and Lapsley (2005) assert that the existing competitive environment encourages the actual use of ABC information and Kallunki and Silvola (2008) found that a bureaucratic structure facilitated the use of the system across life cycle stages of Finish companies.

As shown in Table 3-1, contingency factors influence each stage of the ABC implementation and are found to be different at every stage in each country. Overall, most studies focus on some stages but not the entire implementation process and do not specify which factors influence them.

At the initiation and adoption stage of ABC implementation in developed economies, competition, government policy, technology, size and an innovative culture were found to be important factors. Moreover, competition, centralisation and organisational strategy influenced the choice of ABC to resolve cost system problems. Technology, in terms of IT and costing software and organisational structure are crucial at the implementation stage. At the use of information stage, competition, size, organisational structure and culture were found to be significant factors.

Due to fewer studies about developing economies, contingency factors were found to influence only two stages. Competition and organisational size influence the adoption of ABC, and organisational structure and size are important for the use of the information.
Table 3-1: Factors influencing each stage of ABC implementation process found by studies in different countries

<table>
<thead>
<tr>
<th>Developed countries</th>
<th>Adoption</th>
<th>Design</th>
<th>Implementation</th>
<th>Use of information</th>
<th>Does not specify stages</th>
</tr>
</thead>
</table>
| USA                 | - Competition (Anderson, 1995; Hobdy et al., 1994; Mays & Sweeney, 1994)  
                     - Government policy (Hobdy et al., 1994; Mays & Sweeney, 1994) (indirect)  
                     - Size (Krumwiede, 1998) | - Competition (Anderson et al., 2002)  
                     - Organisational structure (Anderson et al., 2002) | - Technology (Anderson et al., 2002)  
                     - Organisational structure (Anderson et al., 2002) | - Organisational culture (Ezzamel et al., 2004) |
| UK                  | - Competition (Al-Omiri & Drury, 2007; Arnaboldi & Lapsley, 2005; Ezzamel et al., 2004; Innes & Mitchell, 1993)  
                     - Size (Brierley, 2008; Innes & Mitchell, 1995) | - Competition (Arnaboldi & Lapsley, 2005)  
                     - Organisational culture (Arnaboldi & Lapsley, 2005) | - Organisational culture (Ezzamel et al., 2004)  
                     - Government policy (Hopper & Major, 2007)  
                     - Organisational strategy and culture (Major & Hopper, 2005; Vieira & Hoskin, 2005) |
| Portugal            | - Competition (Vieira & Hoskin, 2005)  
                     - Government policy (Hopper & Major, 2007) | | | - Organisational strategy and culture (Major & Hopper, 2005; Vieira & Hoskin, 2005) |
| Australia           | - Technology (Askarany et al., 2007)  
                     - Organisational culture (Baird et al., 2004) | - Organisational culture (Baird et al., 2007) | | |
<p>| Finland             | - Competition (Kallunki &amp; Siitola, 2008) | | - Competition and organisational structure | - Organisational culture (Malmi, 1997) |</p>
<table>
<thead>
<tr>
<th>Developing economies</th>
<th>Adoption</th>
<th>Design</th>
<th>Implementation</th>
<th>Use of information</th>
<th>Does not specify stages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>- Organisational strategy (Gosselin, 1997)</td>
<td>- Organisational structure (Gosselin, 1997)</td>
<td></td>
<td></td>
<td>(Kallunki &amp; Silvola, 2008) - Size (Kallunki &amp; Silvola, 2008)</td>
</tr>
<tr>
<td>China</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Organisational structure and culture (Fei &amp; Isa, 2010a)</td>
</tr>
<tr>
<td>Malaysia</td>
<td>- Competition (Majid &amp; Sulaiman, 2008)</td>
<td></td>
<td></td>
<td></td>
<td>- Organisational culture (Brewer, 1998)</td>
</tr>
<tr>
<td>Thailand</td>
<td>- Competition (Chongruksut &amp; Brooks, 2006)</td>
<td></td>
<td></td>
<td></td>
<td>- Organisational culture (Morakul &amp; Wu, 2001)</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>- Competition (Al-Omiri, 2012) - Organisational size (Khalid, 2005)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iran</td>
<td>- Organisational size (Ahmadzadeh et al., 2011)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3.2.2 Contingency Factors Influencing ABB Implementation Process

Due to the limitation of studies about ABB, there is little information about its implementation. This study adapts the four stages of ABC implementation of Arnaboldi and Lapsley (2005) to describe the process of ABB implementation as follows:

- **The initiation and adoption stage** of ABB is the first stage. Firms consider and approve the implementation and at this stage, the appropriation of necessary resources occurs to support it. ABB was selected in response to changes in competition (Hansen & Stede, 2004; Liu et al., 2003; Sandison et al., 2003) and production technology (Block & Carr, 1999).

- **The design stage** includes the creation of the budgeting structure, mapping and identification of activities and the activity drivers. Organisational strategy is important to the design of the ABB process as the system needs to be consistent with organisational strategy (Brimson & Antos, 1999; Sandison et al., 2003).

- **The implementation stage** includes budget preparation that requires cooperation between departments, control and evaluation. It includes data collection, data entry, calculation, and accounting system revision. Player (2004) stated that high participation from staff, and teamwork culture are important in the implementation of ABB. Bunce et al. (1995) found that ABB was difficult to implement in firms that have an hierarchical structure. Moreover, IT provides accurate and timely information with less cost (Mason, 1996).

- **The use of information** refers to the use of ABB reports for enhancing competitive advantage. ABB is used for decision-making, (especially pricing decisions) (Block & Carr, 1999), future planning, profit maximisation, control, performance (Joshi et al., 2003) and for achieving business strategies.

As described previously, the first proposition is that six contingency factors that are competition, government policy, technology, organisational strategy, organisational structure and organisational culture could influence each stage of the ABC/ABB implementation differently in developing and developed economies (see Figure 3-1).
The process of ABC/ABB implementation consists of four stages that are initiation and adoption, design, implementation, and use of information.

**The first four sub-research questions are:**

In Thai companies:

1. What factors influence the adoption of ABC/ABB?
2. What factors influence the design of the ABC/ABB system?
3. What factors influence the implementation of ABC/ABB?
4. What factors influence the use of ABC/ABB information?

**Figure 3-1: The relationship between contingency factors and process of ABC/ABB implementation**
3.3 FACTORS RELATED TO THE ABC/ABB IMPLEMENTATION SUCCESS

3.3.1 Factors Related to the ABC Implementation Success

Since the introduction of ABC in 1987, the studies of its adoption and implementation have focused on technical factors such as identification of activities, selection of cost drivers and the accumulation of cost data (Cooper, 1988; Cooper & Kaplan, 1988, 1992). The problems and failures of ABC implementation have been identified and as a consequence, Cooper et al. (1992) and Morrow and Connelly (1994) claim that technical factors alone does not lead to success. They suggest that to achieve a successful ABC implementation, contextual, behavioural and organisational factors need to be considered. This is consistent with the opinion of Shields (1995), and Shields and McEwen (1996). Shields (1995) proposes seven specific behavioural and organisational factors that are necessary for a successful implementation. These specific factors are sub-sets of contingency factors discussed in previous sections and include:

- top management support,
- linkage of the ABC system to competitive strategies,
- linkage of the ABC system to performance evaluation and compensation,
- adequate internal resources,
- training in designing, implementing and using the ABC system,
- non-accounting ownership, and
- consensus about and clarity of the objectives of ABC.

However, the role of contingency factors can assist firms to successfully implement ABC. Firms that have a mechanistic structure (Gosselin, 1997) and innovative culture (Baird et al., 2004) are likely to be more successful in implementing it and sufficient resources, such as a strong IT system play an important role during the process (Krumwiede, 1998).

The term ‘ABC Implementation Success’ is evaluated by the degree of satisfaction with the system (McGowan & Klammer, 1997; Shields, 1995), the degree of satisfaction with the ABC methodology for calculating product costs (Swenson, 1995),
the perception of the benefits of ABC (Foster & Swenson, 1997), and the use and accuracy of ABC data (Anderson & Young, 1999). Thus, a successful ABC implementation is defined by the decision to continue using the system once benefits are forthcoming.

Table 3-2: A list of factors related the success of ABC implementation developed and developing economies

<table>
<thead>
<tr>
<th>Success factors proposed by Shields (1995)</th>
<th>Found in developed countries</th>
<th>Found in developing economies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Top management support</td>
<td>(Al-Omiri &amp; Drury, 2007; Anderson, 1995; Anderson &amp; Young, 1999; Arnaboldi &amp; Lapsley, 2005; Baird et al., 2007; Foster &amp; Swenson, 1997; Krumwiede, 1998; Major &amp; Hopper, 2005; Shields et al., 1995)</td>
<td>(Chongruksut, 2002; Chongruksut &amp; Brooks, 2006; Fei &amp; Isa, 2010a; Lee et al., 2010; Liu &amp; Pan, 2007; Majid &amp; Sulaiman, 2008; Sartorius et al., 2007; Tupmongkol, 2008)</td>
</tr>
<tr>
<td>2. Linkage of ABC system to competitive strategies (organisational strategy)</td>
<td>(Shields, 1995)</td>
<td>(Majid &amp; Sulaiman, 2008)</td>
</tr>
<tr>
<td>3. Linkage of ABC system to performance evaluation and compensation</td>
<td>(Foster &amp; Swenson, 1997; McGowan &amp; Klammer, 1997)</td>
<td>-</td>
</tr>
<tr>
<td>4. Adequate internal resources (such as fund and IT)</td>
<td>(Anderson &amp; Young, 1999; Arnaboldi &amp; Lapsley, 2005; Bhimani &amp; Pigott, 1992; Friedman &amp; Lyne, 1999; Innes &amp; Mitchell, 1993; McGowan &amp; Klammer, 1997)</td>
<td>(Sartorius et al., 2007; Tupmongkol, 2008)</td>
</tr>
<tr>
<td>5. Training in designing, implementing and using the ABC system</td>
<td>(Al-Omiri &amp; Drury, 2007; Baird et al., 2007; Krumwiede, 1998; McGowan &amp; Klammer, 1997)</td>
<td>(Sartorius et al., 2007; Tupmongkol, 2008)</td>
</tr>
<tr>
<td>7. Consensus about and clarity of the objectives of ABC</td>
<td>-</td>
<td>(Chongruksut, 2002; Tupmongkol, 2008)</td>
</tr>
</tbody>
</table>

Contingency Factors

<table>
<thead>
<tr>
<th>Contingency Factors</th>
<th>Found in developed countries</th>
<th>Found in developing economies</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Organisational structure</td>
<td>(Friedman &amp; Lyne, 1999; Gosselin, 1997)</td>
<td>-</td>
</tr>
<tr>
<td>5. Organisational culture</td>
<td>(Baird et al., 2007; Baird et al., 2004; Brewer, 1998; Ezzamel et al., 2004; Major &amp; Hopper, 2005; Malmi, 1997; Vieira, 2002)</td>
<td>-</td>
</tr>
<tr>
<td>6. IT</td>
<td>(Krumwiede, 1998)</td>
<td>-</td>
</tr>
</tbody>
</table>
As shown in Table 3-2, factors related to the success of ABC implementation are different between developed and developing economies. Top management support is the most crucial of the success factors in both developed and developing economies. Training, internal resources, non-accounting ownership and organisational culture are likely to be more important in developed countries. Due to the lack of ABC implementation studies about developing economies, the experience of Thailand, which is the case site for this study, forms the only comprehensive commentary available. In Thailand, a clear consensus about the objectives of ABC was found to be important and few studies have described contingency factors, such as organisational structure and culture, as relevant to the successful implementation of ABC in developing economies.

### 3.3.2 Factors Related to the ABB Implementation Success

None of the ABB studies identify specific factors that influence its successful implementation. However, these studies mention some factors which are similar to those that influence the successful implementation of ABC developed by Shields (1995).

Specific success factors were found to influence the implementation of ABB. Top management support is the most crucial factor of a successful ABB implementation. Following the principles of ABB described by Player (2004), top management plays an important role in setting goals that focus on corporate improvement, link the reward system to goals, plan for the budgeting process, provide sufficient resources, create consistency and the environment for teamwork participation, and control the budgeting process through using key performance indicators. Player (2004), states that besides top management support, linking ABB to competitive strategies, performance evaluation and compensation, providing adequate internal resources, clarifying objectives and non-accounting ownership are also important to the success of the ABB process. Moreover, training about the ABB concept is important to implementation success. An exploration of activity-based techniques by Friedman and Lyne (1997) discovered the need for training. The case they cite is Fletham (a UK company) where after its budget had been prepared on the ABB concept, a manager of the business centre requested more training about the process. The training request resulted from the manager’s need to understand
product flow that was lacking because the company did not include management accountants during the budget preparation process.

Furthermore, IT (Mason, 1996), organic structure, learning and teamwork culture (Bunce et al., 1995; Player, 2004) are described as supportive factors necessary to the successful implementation of ABB.

Once a company decides to use and improve the ABC/ABB system after implementation, it is considered the process has been successful. The literature described previously leads to the second proposition and the fifth sub-research question.

The second proposition is: the contingency related success proposed by Shields (1995) influences the success of ABC/ABB implementation in developing economies differently to developed economies (see Figure 3-2).

The fifth sub-research question:

What factors influence the success of ABC/ABB implementation by Thai companies?

Figure 3-2: The relationship among contingency factors, success factors and the success of ABC implementation
3.4 THE OUTCOME OF THE ABC/ABB IMPLEMENTATION

As most prior studies are based on survey, they lack in-depth investigation of the feature of ABC model which is affected by contingency factors and success factors. Anderson et al. (2002) asserted that competition and organisational structure influences the characteristics of ABC model. Organisational strategy is also found to influence changes in the feature of ABC model (Gosselin, 1997). However, these studies do not illustrate how the ABC model looks like. Therefore, the last proposition aims to investigate the outcomes of ABC/ABB implementation which are influenced by identified contingency and success factors from Proposition 1 and 2. The ABC/ABB model might be similar to or different from the traditional ABC system described by Cooper and Kaplan (1987, 1988) and Johnson and Kaplan (1987) (see Chapter 2 - Section 2.2).

The third proposition is that the designed outcome of the ABC/ABB implementation process is different in developing versus developed countries (see Figure 3-3).

Figure 3-3: The relationship among contingency and success factors, ABC implementation process and the feature of ABC system
The sixth sub-research question:

What are the overarching features of the ABC/ABB system developed in each Thai company and how are they different from the traditional ABC/ABB system described by Cooper and Kaplan (1987, 1988) and Johnson and Kaplan (1987)?

3.5 CONCEPTUAL FRAMEWORK

To achieve the research objectives of this study, the conceptual framework is developed to establish the scope of the study and provides a roadmap describing its purpose (see Figure 3-4).

Figure 3-4: Conceptual Framework for this research

RQ1: Do the same contingency factors hold throughout the varying stages of ABC implementation?

RQ2: Do the same contingency factors hold in developing versus developed countries?

Contingency Factors
- Government Policies
- Competition
- Technology
- Strategy
- Structure
- Culture

Process of ABC/ABB Implementation
- Stage 1: Initiation & Adoption
- Stage 2: Design
- Stage 3: Implementation
- Stage 4: Use of Information

Degree of continued use

Framework of ABC implementation success

Shields (1995)
- Top management support
- Adequate resources
- Link ABC system to performance evaluation and compensation
- Non-accounting ownership
- Link ABC to competitive strategies
- Clarity of ABC objectives

The final features of ABC systems

SRQ1: What factors influence the Adoption of ABC/ABB?

SRQ2: What factors influence the Design of ABC/ABB?

SRQ3: What factors influence the Implementation of ABC/ABB?

SRQ4: What factors influence the Use of Information?

SRQ5: What factors influence the Success of ABC/ABB Implementation?

SRQ6: What are the overarching features of the ABC/ABB system?
3.6 SUMMARY

This chapter describes the conceptual framework that was developed with reference to the body of relevant literature in Chapter 2. In order to support the research model, three proposals are offered. The first explains contingency factors influencing ABC/ABB implementation process. The second explains factors related to the ABC/ABB implementation success. The third explains the outcome of the ABC/ABB implementation. Research questions are developed to fill research gaps highlighted in the literature. The conceptual framework is modelled around contingency theory with research based on further contributing to the theoretical frame. The conceptual framework becomes a guideline for research design, methodology selection and data analysis, which is explained in more detail in the next chapter - Chapter 4.
CHAPTER FOUR
RESEARCH METHODOLOGY AND METHODS

4.1 INTRODUCTION

In previous chapter, the conceptual framework was developed for the study by using contingency theory. This chapter aims to explain and justify the methodology. Methodology can properly refer to the theoretical analysis of the methods appropriate to a field of study or to the body of methods and principles particular to a branch of knowledge. Thus, a well-designed methodology ensures validity and reliability of data collected for research (Silverman, 2005). This study is based on qualitative research and it needs a thorough methodology to identify the appropriate phenomena pertaining to the ABC implementation in Thailand. As stated in Chapter 3, this study aims to identify factors influencing management perceptions of ABC implementation at each stage and explain the process of its implementation by Thai companies. “Why” and “how” questions are used to achieve these research objectives. Thus, in general terms, the methodology is to show the reader how the study was conducted the ‘method of inquiry’. This means that the methodology explains how the researcher understood the research phenomena rather than specific techniques for gathering and examining data. The methodological approach is predicated on an interpretive, qualitative approach which is operationalised through case study methodology. All relevant research and philosophical assumptions for the justification of the selection of the methodology and methods are explained in this chapter.

This chapter is organised in seven sections. Section 4.2 explains the rationale for selecting a qualitative approach through the review of the methodological debate in management accounting research. Section 4.3 describes the methodological choices and selected research methods by drawing from qualitative research and interpretivism. Section 4.4 presents the research design for this study. Case selection and data
collection are examined in Section 4.5, and data analysis is clarified in Section 4.6. The explanations regarding reliability, validity checks and the role of ethical confidentiality are explained in Section 4.7 and 4.8 respectively.

4.2 RATIONALE FOR SELECTING A QUALITATIVE APPROACH

In conducting research, researchers need to understand the philosophical assumptions and the relationship of ontology, epistemology and methodology. Ontology is the nature of reality which has two different assertions.

The first assertion (realists/objectivists) is that “reality subsets within the objects (Ryan et al., 2002, p. 13) / the world exists objectively independently of individual perception (Lukka, 1990, p. 242). The second assertion (idealists/subjectivists), as opposed by realism, believes that “reality exists within the mind of the subject (Ryan et al., 2002, p. 13) / the world is basically spiritual or at least dependent on the consciousness of separate individual (Lukka, 1990, p. 242)”. 

In summary, the theory articulates and provides necessary assistance to a researcher to arrive at a view about the nature of the world (ontology) and what constitutes knowledge either past or present as well as how it relates to the current focus on investigation (epistemology).

Ontology is the theory being; it is designed to determine the nature of the fundamental kinds of things that exists. Theorist all have an ontological commitment, which is the assumptions about what there is and what sorts of things are assumed (Gaffikin, 2008, p. 6).

Epistemology describes known reality and nature of the relationship between the knower and what is known (Krauss, 2005). Organisations and their human relations are assumed to be socially constructed by the meanings attached to each social action of the social actor. In order to understand phenomena emanating from a subjective reality, a
The researcher has to apply an epistemology which may include actors’ approaches such as construction of meaning from social/organisational actions of the people.

*Epistemology is usually referred to as the theory of knowledge and consists of the ‘rules’ of how and whether knowledge is acquired. An epistemology is any theory of what constitutes valid knowledge* (Gaffikin, 2008, p. 7).

Methodology is the approach taken in the process of conducting research (Wahyuni, 2012). Ontology and epistemology affect methodological choices (Bisman, 2010; Wahyuni, 2012). The different views of ontology and epistemology distinguish many research paradigms for selecting a suitable research methodology such as positivism, post-positivism (critical-realism), interpretivism (constructivism), critical theory and pragmatism.

In the same way, the ontological and epistemological assumptions are applicable to accounting research (Bisman, 2010; Chua, 1986; Lukka, 1990; Parker, 2012; Ryan et al., 2002). Initially, accounting researchers used the positivist’s view by applying scientific methods in conducting their research so-called ‘mainstream accounting research’ (Lukka, 2010; Parker, 2012). Positivism was dominant among accounting research community. Generally, positivism is highly objectivist view in common. Positivists believe that reality is an externality which exists independently of human thought and perception so-called objective ontology (Bisman, 2010). The epistemology of positivism advocates the use of the scientific approach by developing numerical measurement to generate acceptable knowledge (Wahyuni, 2012). Positivists use for universal principles and generalisability and imply the use of quantitative methodology focusing on verification of hypotheses (Bisman, 2010; Guba & Lincoln, 1994). Researchers is independent from the reality; therefore, the same absolute problem can be observed by different researchers (Creswell, 2009).

The quantitative emphasis of positivism, Hopwood (1979) asserts that mainstream accounting research cannot help accounting researchers know much about the actual function of accounting systems in organisations. Due to the complexity and inconsistency of accounting practices within organisations (Humphrey & Scapens, 1996), accounting researchers need to get close to organisational actors to understand
the processes by which management and accounting practices are implemented (Chua, 1988; Parker, 2012). Since the 1970s, the limitation of mainstream accounting research demonstrated the need of behavioural view in accounting research led to a shift in accounting research from positivism to normativism (Laughlin, 1995). Normative accounting research focuses on the prescription of phenomena rather than the explanation and prediction which are concerned by positive accounting research (Scapens, 1990).

For these reasons, an interpretive paradigm is introduced into accounting research. In the social sciences, the interpretive paradigm as “micro-sociology”, “qualitative sociology”, “qualitative and naturalistic methodology” and “natural perspectives” (see Chua, 1988, p. 59). Interpretivists believe that reality, which is subjective, relativistic and non-material, is internally experienced, interpreted and constructed in the individual’s mind (Bisman, 2010; Denzin & Lincoln, 2000; Guba & Lincoln, 1994). Therefore, interpretive researchers examine

“a constantly changing world that is dependent on individuals who act within and are involved with the research object. In addition, researchers have to bear in mind that they themselves are also active subjects whose reality is created by their own consciousness to a greater or lesser degree.” (Lukka, 1990, p. 242).

Interpretive researchers adopt qualitative methodology to understand, interpret and describe the meaning that individuals ascribe to objects from within the settings in which they are found. Multiple methods are involved in qualitative approach which are interviews, observations, and documentary analysis, live settings and processes (Denzin, 1989; Denzin & Lincoln, 2000; Parker, 2012).

Interpretive perspective provides advantages for the application of the qualitative approach in management accounting research. First, interpretivist questions assist management accounting researchers achieve their research objectives (Chua, 1988). “How” questions aim to interpret, describe and observe the phenomena, opposing why questions used by positivists. “Why” questions emphasise causal relationships and aim to test a set of hypotheses, which are derived from existing theories through the selection and control of relevant variables rather than investigating the phenomenon
under study (Parker, 2003). Qualitative research also demonstrates that the understanding of management accounting needs more than economics-based hypotheses (Kholeif, 2011).

Second, in qualitative approach assists management accounting researchers to reach a deeper understanding of management and accounting through the interaction among researchers and participants processes and structures (Guba & Lincoln, 1994; Parker, 2003, 2008, 2012).

Qualitative researchers emphasise “the socially constructed nature, the intimate relationship between the researcher and what is studied, and the situational constraints that shape inquiry” (Denzin & Lincoln, 2013, p. 17).

Interpretivists and qualitative researchers perceive that knowledge is created through the interplay of investigators and the known (Denzin & Lincoln, 2000, 2008; Guba & Lincoln, 1994). Qualitative researchers have an opportunity to access participant’s perceptions and become involved in the organisation, rather than using remote research techniques, such as computer modelling, that is favoured by quantitative researchers (Parker, 2003). Therefore, quantitative approach is not best fitted for examining the complexities of management accounting processes and their surrounding contexts.

Third, the qualitative approach in management accounting can produce rich theoretical perspectives and understanding. Llewellyn (2003) highlights that qualitative research in management and accounting provides theoretical contributions by examining metaphors, differentiates experiences into dualities, developing and refining concepts brought from the field, and describes how organisations interact with their environments. Humphrey and Scapens (1996) claim that an aim of understanding accounting is to illustrate how the relevant social theories can be applied to specific case studies. Fourth, qualitative research provides a deeper understanding of management accounting for academics in developing management accounting perspective in their textbooks (Vaivio, 2008). It discloses the fact which actually emerges in the implementation of management accounting techniques which does not exactly match the management accounting perspectives in the textbooks.
Although qualitative research provides significant theoretical advances, researchers need to know how to use the approach correctly. Vaivio (2008) suggests management accounting researchers to utilise theory in interpretive phases and reconnect theoretical starting point with clear empirical evidence. He additionally warns researchers to not replicate the previous studies because the replication of illustrative studies leads to uncritical and unsurprising findings.

The decision to use the qualitative approach for this study was determined by the researcher’s world view about knowledge (Denzin & Lincoln, 2000; Guba & Lincoln, 1994; Llewellyn, 2003). This study has used the qualitative approach for two main reasons. Firstly, the qualitative approach is dependent upon the research objectives (Nelson et al., 1992). This study aims to identify the factors influencing and to explore the process of ABC implementation by Thai companies. “Why and how” questions which are generic to the qualitative approach are needed to achieve the objectives of this study and to gain a deeper understanding of the process of ABC implementation (Parker, 2003).

Secondly, drawing on Laughlin’s (1995) middle range thinking which suggests that qualitative research is guided by theoretical framing, this qualitative approach enables a better understanding of how contingency factors influence the implementation of ABC. This study uses contingency theory to explain ‘which and how’ factors have influenced on the implementation of ABC. Contingency factors are generalised through using the quantitative approach (see Anderson & Young, 2001; Chandler, 1962; Chenhall & Morris, 1986; Lawrence & Lorsch, 1967; Woodward, 1958). A quantitative approach provides a narrow rather than open-ended interpretation of reality which could overlook several unique issued pertaining to the generalised model. Moreover, the qualitative approach has been selected to test contingency factors in the Thai context and discover other emerging factors.

The interpretivist paradigm upon which the ontology of this study is predicated deals with the subjective reality of the social world. The epistemology lies within the replication of theory as against generalised social phenomena through lived experience (Llewellyn, 2003). As the researcher holds a relativist position, an interactive
relationship has been established to the participants (Baxter & Chua, 2003; Guba & Lincoln, 1994; Humphrey & Scapens, 1996). Through applying qualitative research to management accounting, the case study is an appropriate research methodology for exploring accounting practices in organisations and is described in the next section (see Humphrey & Scapens, 1996; Kaplan, 1986; Llewellyn, 2003; Lukka & Kasanen, 1995; Parker, 2012; Scapens, 1990).

4.3 METHODOLOGY AND METHODS

The study deals with the interpretivist paradigm which assumes a relativist ontology, a subjectivist epistemology and a naturalistic set of methodological procedures (Denzin & Lincoln, 2013). Therefore, Qualitative case study methodology and interview method are employed as a research methodology and research method respectively in this study. The following sections provide a brief understanding of methodological choices.

4.3.1 Methodology

Yin (2003) notes that case study, which is an essential research strategy for social science inquiry, is appropriate to explain broadly research topic, to cover complex multi-variables and to contain of multiple sources of evidence. Even though in the management accounting research, case study methodology becomes an effective methodological choice to understand management accounting change in organisations.

Case study is concerned with “the importance of the subjective human creation of meaning” (Baxter & Jack, 2008).

Therefore, researchers play a crucial role in the interpretation of social reality which derives from participants’ stories (Scapens, 1990). Especially in management accounting research, the researcher has an opportunity to understand the nature of management accounting practices in terms of which, why and how they are used (Scapens, 1990). Furthermore, the case study a) provides the basis for the classification of cost accounting and management control practices; b) provides a more informal basis through the process tracing studies for modelling and theory-building, advocated by
Eisenhardt and Graebner (2007); and c) tests the validity and limits of applied theories (Kaplan, 1986). The case study uses multiple data sources which enhances data creditability (Baxter & Jack, 2008; Yin, 2009). Major data sources are derived from interviews, direct observations, participant-observation, documentation, archival records and physical artifacts (Yin, 2009). As the advantages of case study, the use of case study has been required more than the use of dot data to understand management accounting practices among the management accounting research community (see Humphrey & Scapens, 1996; Llewellyn, 2003; Parker, 2003, 2012; Scapens, 1990).

However, Scapens (1990) describes three difficulties regarding the case study as methodology. First, it is impossible to study all aspects of a social system; the case study researcher needs to scope the aspects of the study. Other excluded aspects can limit the study and provide research opportunities for other researchers. Secondly, it is difficult for the case study researcher to describe the nature of social reality because social reality is interpreted by the researcher. This leads to researcher bias which can be reduced through data validation, a team of researchers and feedback from the subjects of the study. Moreover, it is difficult to control the ethics of the researcher’s relationship with participants. The researcher needs access to confidential information and be able to use it in the study and as well, publish the results.

Yin (2009) asserts that the case study is generally used when a) the researcher proposes “how” or “why” questions; b) the researcher has reduced control over the events; and c) the researcher focuses on a current phenomenon within a real-life context. Stake (2008) claims that the researcher selects case studies based on the interest in individual cases. Scapens (1990, p. 265) classifies case studies for accounting research into five forms namely descriptive, illustrative, experimental, exploratory and explanatory. The Descriptive case study is used to describe accounting systems, techniques and procedures used in practice. The Illustrative case study is used to demonstrate new and possibly innovative practices developed by particular organisations. The Experimental case study is used to develop new accounting procedures and techniques that are intended to be helpful to accounting practitioners. The Exploratory case study is used to explore the possible reasons for particular accounting practices and enable researchers to generate hypotheses that can be tested using survey methods and quantitative
techniques. The *Explanatory* case study is used to explain the reasons for specific accounting practices rather than generalising in order to construct theory to explain the case. Scapens (1990) claims that although the characteristic of each type of case study is ambiguous, each case can underpin another to search for more information. He illustrates that the exploratory case study can generate preliminary ideas to form the basis of an explanation of accounting practices.

To study what and how contingency factors influence the implementation of ABC, Chenhall (2012) states that case study provide the opportunity to separate particular organisational contextual factors which are hidden in the organisational context. However, Chenhall (2012) opines that researchers who want to do case study need to ensure high quality of research.

This study selected the case study as a research strategy to describe and explore the reason for the implementation of ABC (why or what factors), and explain the process of implementation by Thai companies (how). The comparison of multiple cases (Baxter & Jack, 2008) and the structure and process of case study could increase the knowledge about the implementation of ABC in Thailand and provide a detailed description of its implementation in industries (Scapens, 2004; Yin, 2002). In case study methodology, effective research methods need to be selected in order to enhance the research quality and these are described in the next section.

4.3.2 Methods

Research methods which are employed in case study methodology include observation, interviews, and documentary and archival research (Parker, 2003). This study used three methods for data collection which are interviews, documentation and archival records.

4.3.2.1 In-Depth Interviews

The interview is one of the most important sources of case study (Yin, 2009). Denzin (2009) explains that the interview is a face to face verbal interchange between interviewer and participants in an attempt to elicit behaviours and information from participants. Yin (2009) proposes three type of case study interview consisting of an in-
depth interview, a focused interview and a survey interview. The in-depth interview is the preferred method for this study as the interviewer can ask key participants about facts and their opinion of events. The interviewee can also recommend other participants for interviews (Yin, 2009). The in-depth interview process could acquire new information for this study. Focused and survey interviews enable the interviewer to ask specific questions only within a limited time (Yin, 2009).

Three forms of the interview, schedule structured, non-schedule standardised, and the non-standardised interview are proposed by Denzin (2009), that are similar to the interviewing forms described by Scapens (2004). These interview forms are structured, semi-structured and unstructured respectively. The schedule structured interview is used for a pilot interview in order to pre-test and develop a set of interview questions. Wording and meaning for all questions are equally meaningful and identical for every participant (Denzin, 2009). The non-schedule standardised interview or semi-structured interview is the use of scheduled and unscheduled inquiries providing the researcher to draw out more complete narratives from the participants by investigating further a particular topic (Qu & Dumay, 2011). Hence, the semi-structured interview is used for the main interviews to collect specific information based the needs of the interviewer. The questions are redefined for each participant but retain the same meaning (Denzin, 2009). The non-standardised interview or unstructured interview is used to collect further information after the semi-structured interview has been conducted. Its secondary function is to probe the collected information through unstructured questioning. The argument against this type of interview is participant bias. Vaivio (2008), suggests the researcher needs to minimise participant bias by interviewing participants from different levels of the organisational hierarchy. This enables the facts to be cross-checked the facts and provides a 360 degree perspective of the investigated events.

4.3.2.2 Documentation

Documentary information is secondary sources which are increasingly available through Internet searches. The following selection of documents is an example:
“♦ letters, memoranda, e-mail correspondence, and other personal documents, such as diaries, calendars, and notes;
♦ agendas, announcements and minutes of meetings, and other written reports of events;
♦ administrative documents – proposals, progress reports, and other internal records;
♦ formal studies or evaluations of the same “case” that you are studying; and
♦ news clippings and other articles appearing in the mass media or in community newspapers.” (Yin, 2009, p. 103).

4.3.2.3 Archival Records

Archival records are an accumulation of historical records which contain primary source documents that have been accumulated over an individual or organisation's lifetime, and are kept to show the role of that person or organisation. This type of data source is usually confidential except for some government archives which are open to the public through freedom of information. Archival records contain:

“♦ public use files such as the U.S. census and other statistical data made available by federal, state, and local governments;
♦ service records, such as those showing the number of clients served over a given period of time;
♦ organisational records such as budget or personnel records;
♦ maps and charts of the geographical characteristics of a place; and
♦ survey data such as data previously collected about a site’s employees, residents, or participants.” (Yin, 2009, p. 105).

For case studies, in-depth interviews, documentation and archival records are important data sources for verification and validation. These resources expand evidence from other sources in detail and provide guidelines for developing interview questions (Yin, 2009). Triangulation allows researchers to combine multiple sources of evidence in order to address a broader range of historical and behavioural issues, and also provide creditability and confirmability of research findings (Denzin, 1989; Ezzamel et al., 2004; Modell, 2005; Patton, 2002; Vaivio & Sirén, 2010; Yin, 2009). However, the aim of triangulation is similar to that of the case study; it is the opportunity to use different
sources of evidence (Yin, 2009). Triangulation is used to validate data in qualitative accounting research (Walker & Shackleton, 1995) and conforms to the research design as explained in the next sections.

4.4 RESEARCH DESIGN

As stated in the previous sections, this study uses case study as a research strategy and in-depth interviews as a primary research method to identify the factors that influenced the implementation of ABC and the process of ABC implementation. Before conducting the study, the research was designed to include the methodology and procedures employed in this study.

As shown in Figure 4-1, there are three main stages of this study and they are planning, data collection and data analysis. The planning stage started at the literature review (see Chapter 2) to find research gaps, formulate research questions and develop the conceptual framework (see Chapter 3).

Secondary data (such as Government reports, reports of international organisations and websites, and annual reports of the top 50 largest companies on the SET) was collected in order to identify the four cases for this study. The identified companies have used ABC as a current costing technique and were willing to participate in this study. The background and general information of selected companies, which are published publicly, were reviewed in order to develop interview questions appropriate to each company’s environment. In addition, interview questions were developed based on the literature review and the companies’ ABC implementation background.

At data collection stage, interviewees were contacted for scheduling interviews. Interviews were conducted to collect in-depth information about the implementation of ABC and follow up was done through e-mail or telephone in the case of unclear information. Subsequently, the interview records were transcribed in Thai and interview scripts were sent to the interviewees to confirm the accuracy of the transcripts. The transcripts were analysed by using a coding technique to identify factors influencing the implementation of ABC and using narrative textual analysis to describe how each
company implemented ABC. The analyses compared the experience of the three companies with findings from previous studies in order to identify unique, common and relevant data.

**Figure 4-1: Research design for this research**

**Planning**

- **Literature Review**
  - See Chapter 2
  - Journal articles, books, conferences proceedings, working papers, etc.

- **Research Questions**
  - See Chapter 3
  - Contingency Factors
  - The process of ABC implementation
  - The design of ABC/ABB system
  - Success factors

- **Conceptual Framework**
  - Government reports, reports of international organizations, and websites and annual reports of the top 50 largest companies in SET
  - Criteria of case selection, companies:
    - are in the Top 50 largest companies in SET
    - have implemented ABC/ABB
    - are willing to participate to the study
  - See Chapter 5, 6 and 7
  - Companies’ websites
  - Companies’ annual reports
  - Other public documents related to selected companies

- **Collecting secondary data**

- **Selecting four case studies**

- **Reviewing cases’ background**

- **Developing interview questions**

**Data Collection**

- **Contacting interviewees**
  - Face to face interviews
  - Interview via telephone calls
  - Interview via e-mail
  - Using audio-recorder

- **Conducting interviews**

- **Transcribing data**
  - Data was transcribed in Thai to avoid missing specific meaning

**Data Analysis**

- **Analysing data**
  - Elaborative Coding
  - Narrative analysis

- **Analysing each case study**

- **Comparing case studies**
  - See Chapter 8
  - Contingency identification
  - Success factors identification
  - The outcome of implementation

- **Conclusion**
  - See Chapter 9
  - Conclusion, contribution, limitation and further study
4.4.1 Question Design for the Interview

Interview questions were designed as a guide for semi-structured interviews predicated by research themes and that corresponded with research questions. Four research themes were identified from the research questions about the factors that influenced ABC/ABB adoption, the implementation process, the design of ABC/ABB, and degree of continued use of ABC/ABB (see Table 4-1). Moreover, questions were designed by using open-ended and closed-ended questions to reach a deeper understanding about its implementation. Open-ended questions such as “why”, “how” and “what” were used to encourage a comprehensive and meaningful response (Patton, 2002). Dichotomous questions (closed-ended) which can be answered by a simple “yes” or “no” were also used as leading questions followed by open-ended questions to enlarge on the answers (Patton, 2002). A set of questions were asked to clarify and to ensure the transparency of language used, to test the accurate meaning of commonly used words by interviewees, and confirm the exact meaning and understanding of the questions asked (Patton, 2002).

Table 4-1: Interview questions for accomplishing research questions

<table>
<thead>
<tr>
<th>Sub-Research Questions</th>
<th>Interview Questions</th>
<th>Research Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>• What factors influence the adoption of ABC/ABB?</td>
<td>- When did you start to implement ABC/ABB in practice?</td>
<td>The process of ABC/ABB implementation includes four stages (Arnaboldi &amp; Lapsley, 2005) namely</td>
</tr>
<tr>
<td>• What factors influence the design of ABC/ABB system?</td>
<td>- What did you do at the first stage of ABC/ABB implementation?</td>
<td>1) Initiation and Adoption</td>
</tr>
<tr>
<td>• What factors influence the implementation of ABC/ABB?</td>
<td>- What were the feedbacks from employees about implementing ABC/ABB?</td>
<td>2) Design</td>
</tr>
<tr>
<td>• What factors influence the use of ABC/ABB information?</td>
<td>- Did you set an ABC team separately from usual work?</td>
<td>3) Implementation and Use of information</td>
</tr>
<tr>
<td>• Were any external or internal pressures forcing your companies to implement ABC/ABB?</td>
<td>- How did you select team member?</td>
<td>4) Use of information</td>
</tr>
<tr>
<td></td>
<td>- Did you organise an ABC/ABB training or workshop?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- How did you design an ABC/ABB system? Why did you design ABC/ABB system in that way?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Was it difficult to collect and calculate data for ABC/ABB system?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- How did you integrate ABC/ABB system into a present accounting system?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Did you revise ABC/ABB system after implementation?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- How did you control ABC/ABB system?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Did you use ABC/ABB information for planning, decision-making and performance measurement in your job?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Were any external or internal pressures forcing your companies to implement ABC/ABB?</td>
<td>Contingency factors and other factors which may influence on</td>
</tr>
</tbody>
</table>
What factors influence the success of ABC/ABB implementation?

- When did you think that you should implement ABC/ABB into your company?
- Why did you decide to implement ABC/ABB into your company?
- Did you implement ABC/ABB by yourself or outsource other professional companies? If you use outsourcing, who are they? If you implement by yourself, did you hire external consultants to help you in ABC/ABB implementation? Who are they?
- Did you design ABC/ABB by yourself or develop the system from others? From where?

The implementation of ABC/ABB including:
- Competition,
- Technology,
- Organisational Strategy,
- Organisational Structure,
- Organisational Culture.
(Anderson, 1995; Anderson et al., 2002; Anderson & Young, 1999; Baird et al., 2004; Cadez & Guilding, 2008; Cadez, 1997; Innes & Mitchell, 1995; Kallunki & Silvola, 2008; Liu & Pan, 2007)

- Did you meet any challenges while you implemented ABC/ABB? What challenges did you meet?
- Was information from ABC/ABB system useful for you as you expected? How was it useful?
- Is ABC/ABB implemented in your company successful? Why?
- What is an important thing for the success of ABC/ABB implementation based on your experience?

Success factors in ABC/ABB implementation (Shields & Young, 1989):
- Top management support
- Competitive strategies,
- Performance evaluation and compensation,
- Internal resources,
- Training in designing,
- Non-accounting ownership, and
- Clarity of the objectives

What are the features of ABC/ABB systems?

- How did you identify activities? Why did you identify activities in that way?
- How did you measure the costs of activities? Why did you measure the costs of activities in that way?

The design of ABC/ABB system, especially the identification of activities, cost drivers (Kaplan, 1998, 2004)

4.5 CONDUCT OF THE RESEARCH

Consistent with the research design, the stage subsequent to planning is the conduct of the research which includes case and data collection.

4.5.1 Case Selection

Sidani and Sechrest (1996) assert that the best way to select a case for study depends on the objectives of the research and the judgement of the researcher. Therefore, cases which illustrate the research issues were selected for this study. The main objective of this study is to identify factors which influence the implementation of ABC. Companies with few products and markets do not receive as much benefit from cost-based activities as companies operating with many products, service lines, channels and customers (Henricks, 1999). The ABC system is generally implemented by large companies rather than small companies (Innes & Mitchell, 1995; Kallunki & Silvola, 2008; Krumwiede, 1998). Hence the rationale for case study selection for this research...
is predicated on the participation of major corporate entities that have implemented ABC as integral to their current management practice.

Subsequently, the top 50 largest companies listed in the SET at the end of 2010 were reviewed and contacted through e-mail and telephone to check which company had implemented ABC and a request for them to participate in this research. As a consequence, four of the top 50 largest companies were selected as case studies and these were a Telecommunications Company (Telecom), an Oil Company (Oil) and a Banking Company (Bank) (see Table 4.2). Furthermore, a Manufacturing Company (Manufacture), which had implemented ABC but does not use it for current management practices, was selected as the fourth case to identify the reasons for the abandonment of the system. Unfortunately, the policy of providing internal information to outsiders of the fourth company was changed before the interviews started. The researcher was unable to collect sufficient data to answer the research questions hence the fourth company has not been included in this study.

The three cases were suitable for the time frame of this research which was determined by RMIT University. Three case studies, rather than one or two, would provide a deeper understanding of the issues and explain the diversity and complexity of phenomenon; however, more than three would reduce the intensity of analysis.

Table 4-2: The list of selected case companies for this research

<table>
<thead>
<tr>
<th>Company name</th>
<th>Symbol</th>
<th>Sector</th>
<th>Market Capitalisation ($AUD) (30 Baht/$AUD)</th>
<th>The rank in the SET</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telecommunications Company</td>
<td>Telecom</td>
<td>Information &amp; Communication Technology</td>
<td>8,845,583,333</td>
<td>2nd</td>
</tr>
<tr>
<td>Oil Company</td>
<td>Oil</td>
<td>Energy &amp; Utilities</td>
<td>560,950,866</td>
<td>45th</td>
</tr>
<tr>
<td>Banking Company</td>
<td>Bank</td>
<td>Banking</td>
<td>8,535,961,355</td>
<td>16th</td>
</tr>
<tr>
<td>Manufacturing Company</td>
<td>Manufacture</td>
<td>Property &amp; Construction</td>
<td>12,600,000,000</td>
<td>8th</td>
</tr>
</tbody>
</table>

Source: SET 2010 prepared by researcher
**Telecom** was established in 1989 to provide a variety of telecommunications services and is a leader in the Thai telecommunications market. By 2010, it had 54% of market share revenue, 45% of subscriber market share, more than 97% nationwide coverage and more than 4,000 employees. Telecom has been a publicly listed company on the SET since 1991 and from 2010, has had market capitalisation of approximately Baht 287 billion (USD 8.6 billion). In 2010, Forbes Global 2000 ranked Telecom 1310th among 2000 of the world’s leading companies. Telecom implemented ABC in 2001 and it was completed in 2007. Telecom serves its customers with a variety of mobile phone products and services such as import and distribution of handsets, accessories, voice and data communication service via telephone and broadband, payment facilities via mobile phone, distribution of cash cards, call centre services, and international telephone gateways.

**Oil** was established in 1985 by the Cabinet of Prime Minister Major-General Prem Tinsulanon, in order to put the existing oil refinery on a profitable basis. As a consequence, Oil had the status of a State Enterprise until 2003. In 2010, Oil owned and operated a refinery with a production capacity of 120,000 barrels per day. It also operated businesses in retail and wholesale for refined petroleum products through 1,000 service stations. Its products included LPG (Liquefied Petroleum Gas), Gasoline (Benzene), Diesel Fuel, Jet Fuel, Bunker Oil / Fuel Oil and alternative energies (Bio Diesel, Ethanol, and Solar Energy). In 2011, Oil was the third-largest oil retailer through its service stations, with a market share of 13.4% and 935 employees and was listed on the SET in 1993. From 2010, its market capitalisation was approximately Baht 16.8 billion (USD 0.56 billion). Oil has been used ABB since the Company was established.

**Bank** was established in Thailand on 8th June 1945. The Company’s main business is commercial banking. In 2010, Bank was the third-largest commercial bank in terms of corporate assets. In 2010, the Company was ranked 16th on market capitalisation by the SET. Its market capitalisation was approximately Baht 256 billion (USD 8.5 billion). In the same year, Bank had 805 branches and 7,471 ATMs in Thailand. In 2010, the Company’s total staff was 15,677 which was a 36% increase over 10 years. In 2010, Bank was ranked 679th on the global 2000 leading companies by Forbes Magazines.
Bank implemented ABC in 2001 but did not use the 2001 version. Subsequently, it re-implemented it in 2006 and completed the process in 2009. Bank has four product domains which are Operations and Transactions, Savings and Investments, Funding and Borrowing, and Protection and Information and wide range of banking services.

4.5.2 Data Collection

Both primary and secondary data were collected for this study. The primary data was collected by using in-depth interviews and internal confidential documents. The secondary data was collected from companies’ websites, companies’ annual reports, relevant legislations, government reports and relevant public documents.

Interview Sessions

The interviews were conducted during August to October 2011. Only three companies including Telecom, Oil and Bank had been interviewed completely due to the flood in Bangkok during September to October 2011. To complete the interview with Manufacture, a second series of interviews were conducted in August 2012. Moreover, the first three companies were re-interviewed to confirm details and clarify unclear statements and elicit further information (see Table 4-3). In total, 17 key personnel were selected to participate in this study and they could influence the change in companies’ costing strategies.

As mentioned in the ‘Case Selection’ section, Manufacture cancelled the interviews a month prior to the appointment date because of changes in the policy of information disclosure including the interviews with outsiders. Although some participants had been interviewed via telephone and e-mail before the appointment date, they were not confident to participate in the study. In order to maintain the integrity of the study only three case studies are discussed.

To provide focus and avoid overlooking information, structured and semi-structured questions were used at the beginning of the interview. Subsequently, unstructured questions were used to achieve clarity, a deeper understanding and new information (Scapens, 2004). All interviews were audio-recorded for later transcriptions. The
interviews took approximately one to two hours of the respondents' time and follow up was done through e-mail or telephone in the case of unclear information and to validate the data and information.

**Table 4-3: The interviews’ sessions were conducted for four case sites**

<table>
<thead>
<tr>
<th>Companies</th>
<th>1st session</th>
<th>Managerial level</th>
<th>2nd session</th>
<th>Managerial level</th>
</tr>
</thead>
</table>
| Telecom   | 1. Assistant Director of the Accounting Department  
2. Cost Manager  
3. Senior Cost Accountant  
4. Senior Engineer  
5. Resources Planning Manager  
6. Call Centre Manager | Top level  
Middle level  
Middle level  
Middle level  
Middle level  
Middle level | 1. Cost Manager  
2. Senior Cost Accountant  
3. Senior Engineer | Middle level  
Middle level  
Middle level |
| Bank      | 1. Unit Manager of Finance and Control Division  
2. Director of Profitability Analysis and Information Management Division  
3. Assistant Director of Profitability Analysis and Information Management Division  
4. IT Manager of Finance and Control Division | Top level  
Top level  
Top level  
Middle level | 1. Assistant Director of Profitability Analysis and Information Management Division | Top level |
| Oil       | 1. Executive Vice President of Corporate Administration & IT  
2. Budgeting Manager  
3. Senior Manager of Environment and Community Relation Division | Top level  
Middle level  
Middle level | 1. Budgeting Manager  
2. Manager of Occupational Health & Safety Division | Middle level  
Middle level |
| Manufacture | | | | Middle level  
Middle level  
Middle level |
|           | 13 persons | | 5 same persons as the first session and 4 new persons | |

*The interviews of Telecom*

The Researcher contacted the Chief of Customer Officer for permission to interview Telecom’s employees. The Chief of Customer Officer performs a gatekeeping role.
through enabling the researcher to contact colleagues who are involved in the project of changing the costing system. The Chief of Customer Officer advised the researcher to contact an Assistant Director of the Accounting Department to arrange the interviews.

Six key personnel were selected and invited to participate in the interview session. They were key personnel who could influence change and are: the Assistant Director of the Accounting Department, the Cost Manager, a Senior Cost Accountant, a Senior Engineer, the Resources Planning Manager, and the Call Centre Manager (see Table 4-4). A Senior Costing Accountant, a Senior Engineer, the Resources Planning Manage, and the Call Centre Manager were recruited by the Costing Manager who was assigned by the Assistant Director of the Accounting Department to be in charge of interview support.

The employees of Telecom were experienced in budget preparation and cost control. They became members of the ABC team and provided valuable information for this study. The Assistant Director of the Accounting Department, who has been working for Telecom for more than 15 years, was assigned by top management to implement ABC. The Cost Manager and a Senior Cost Accountant, who have worked in Telecom for nearly 5 years, are responsible for preparing cost information and costing reports. A Senior Engineer, who has been working for Telecom for nearly 15 years, is responsible for preparing engineering budgeting and controlling costs and documenting the details of his department. He has a substantial background in management and accounting. The resources planning manager, who has worked in Telecom for nearly 5 years, is in charge of utilizing and controlling resources for the Call Centre and budgeting. The Call Centre Manager, who has worked in Telecom for nearly 9 years, is in charge of controlling and managing work performance and the costs of the Call Centre.

There were five interviews, the first to the third interviews were conducted at the first interview session. The fourth and the fifth interviews were conducted at the second interview session for clarifying collected information and collecting further information. The first-three and the last interviews were conducted at the head office of Telecom. The forth interview was conducted at another company where a senior engineer has worked for due to a resignation of a senior engineer after the first interview session was
done. In each interview, there were more than one participant attended each interview except the forth interview.

Table 4-4: The list of Telecom’s participants who attended each interview

<table>
<thead>
<tr>
<th>No. of interviews</th>
<th>Date</th>
<th>Designation of participants</th>
<th>Time</th>
<th>Places</th>
<th>Purposes</th>
</tr>
</thead>
</table>
| 1                 | 26/8/11     | 1)Assistant Director of the Accounting Department  
2) Cost Manager | 1 hour | Telecom’s head office in Bangkok | - To describe the objectives of interviews and to get more participants from Telecom  
- To explore why and how Telecom implements ABC in general |
| 2                 | 1/9/11      | 1) Cost Manager  
2) Senior Cost Accountant  
3) Senior Engineer | 2 hours | Telecom’s head office in Bangkok | - To explore the role of an engineer in the implementation of ABC  
- To determine the design of cost allocation in Engineering and how an engineer use ABC information |
| 3                 | 7/12/11     | 1) Senior Cost Accountant  
2) Resources Planning Manager  
3) Call Centre Manager | 1.30 hours | Telecom’s head office in Bangkok | - To explore the role of Call Centre staff in the implementation of ABC  
- To determine the design of cost allocation in Call Centre and how its staff use ABC information |
| The second session of the interviews | | | | | |
| 4                 | 22/8/12     | 1) Senior Engineer | 1 hour | A new work place where a senior engineer works for. | - To confirm the figures of cost allocation and network flow which developed by researcher based on the interview information |
| 5                 | 28/9/12     | 1) Cost Manager  
2) Senior Cost Accountant | 50 minutes | Telecom’s head office in Bangkok | - To correct unclear and collect further information |

As shown in Table 4-4, one member of the accounting staff attended each interview. In response to the interviewer’s request, the costing manager introduced and invited further participants to attend the subsequent interviews. This style of interview has some advantages because it enabled the costing manager to play an important supporting role for the interviews. She recruited staff with relevant skills and knowledge to participate in the interviews. During the interviews, accounting staff explained concepts to staff from other departments which helped the interviewer to
provide a structure to the information. Moreover, this style of interview helped the interviewer to understand the cooperation between departments within one interview and information was confirmed by other interviewees who attended the group interview. For example, an interviewee provided information that was communicated to other interviewees who confirmed whether it was correct.

However, in some circumstances, as expected by the researcher, the confidence of participants might have been reduced due to what they said being reported to their boss or top management by other participants and therefore may have not answered questions accurately. For example, they did not disclose anything about resistance to criticisms about the project.

*The interviews of Bank*

Four key personnel, who work for Bank and are involved in the implementation of ABC, were selected to participate in this study. They are 1) the Director of Profitability Analysis and Information Management Division, 2) the Assistant Director of Profitability Analysis and Information Management Division 3) the IT Manager of Finance and Control Division and 4) the Unit Manager of Finance and Control Division.

The Director of Profitability Analysis and Information Management Division has worked for Bank for three years for the purpose of implementing the ABC system successfully. The Assistant Director of Profitability Analysis and Information Management Division has worked for Bank for four years. She is responsible for methodology and systems related to ABC including training staff for ABC. The IT Manager of Finance and Control Division has worked in the Financial Planning Department for three years and has worked for Bank for five years. He is responsible for the ABC system’s input data. The Unit Manager of Finance and Control Division, who has worked for Bank for five years, is responsible for business performance analysis focusing on retail business. All interviewees have at least MBA qualifications from both international and national universities.

Five interviews were conducted for Bank, one was conducted by telephone and the others at Bank’s head office in Bangkok (see Table 4-5). Both phone and face-to-face
interviews were audio-recorded. Due to flooding in Bangkok during September to October 2011, the researcher had to conduct the first interview by phone.

The Head of Financial Planning Department facilitated access to the Bank which enabled the researcher to interview the Director of Profitability Analysis and Information Management Division. Subsequently, the Director introduced his assistant who introduced the IT Manager and the Unit Manager who participated in the interviews as the research required. This shows the willingness of this Thai company to assists the researcher to complete the interview sessions.

**Table 4-5: The list of Bank’s participants who attended each interview**

<table>
<thead>
<tr>
<th>No. of interviews</th>
<th>Date</th>
<th>Designation of participants</th>
<th>Time</th>
<th>Places</th>
<th>Purposes</th>
</tr>
</thead>
<tbody>
<tr>
<td>The first session of the interviews</td>
<td>1</td>
<td>Director of Profitability Analysis and Information Management Division</td>
<td>1.30 hours</td>
<td>On the phone call</td>
<td>- To describe the objectives of interviews and to get more participants from Bank</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Assistant Director of Profitability Analysis and Information Management Division</td>
<td>1 hour</td>
<td>Bank's head office in Bangkok</td>
<td>- To determine how Bank designs, implements and uses the ABC system</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>IT Manager of Finance and Control Division</td>
<td>1 hour</td>
<td>Bank's head office in Bangkok</td>
<td>- To determine how Bank designs, implement the ABC system and how the IT Manager deals with the consultants</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Unit Manager of Finance and Control Division</td>
<td>2 hours</td>
<td>Bank's head office in Bangkok</td>
<td>- To examine how the Unit Manager uses ABC information and the role of the Unit Manager in the implementation of ABC</td>
</tr>
<tr>
<td>The second session of the interviews</td>
<td>5</td>
<td>Assistant Director of Profitability Analysis and Information Management Division</td>
<td>40 minutes</td>
<td>Bank's head office in Bangkok</td>
<td>- To confirm the figures of cost allocation and working process which developed by researcher based on the interview information</td>
</tr>
</tbody>
</table>

[91]
As shown in Table 4-5, there is only one interviewee in each interview. Although each interviewee is able to express his or her experiences and feelings about the implementation of ABC freely, they know the limit to the information they can disclose during the process. In addition, the researcher was informed that in the past, the Bank’s trust had been violated and confidential information had been given to a competitor therefore it was difficult to get numerical information or information related to cost. In this case, the strong organisational culture was effective in defending Bank’s integrity.

The interviews of Oil

Four key personnel, who work for Oil and were involved in the development of ABB, were selected to participate in this study. They are the Executive Vice President of Corporate Administration and IT, the Budgeting Manager, the Senior Manager of Environment and Community Relation and the Manager of Occupational Health and Safety Division.

The Executive Vice President of Corporate Administration and IT, who has worked for Oil for 26 years since its establishment, is responsible for IT and logistics planning. Due to his experience in the oil business, he is usually invited by Thai universities as a guest speaker about the oil business and logistics planning to MBA (Master of Business Administration) students. The Budgeting Manager, who has worked for Oil for more than 10 years, is responsible for budget preparation. The Senior Manager of Environment and Community Relation, who has worked for Oil for more than 10 years, is responsible for the implementation and use of Environmental Management Accounting (EMA) and Environment Cost Accounting (ECA). She uses information from Oil information system and the ABB system to prepare the ECA reports. The Manager of Safety and Occupational Health Division, who was Head of Engineering and responsible for power plants that provided utilities for refinery plants during the development of ABB and the implementation of EMA and ECA. He was responsible for this operation for 10 years before moving to the occupational health and safety division. He participated in EMA and ECA projects in order to improve production processes and reduce production and environmental costs through using EMA and ECA principles.
Five interviews were conducted with Oil’s participants (see Table 4-6). The locations for the interviews depended on the interviewee’s convenience. Therefore, the first two and the fifth interviews were conducted at Oil’s head office in Bangkok. The third interview was conducted at a department store closed to an interviewee’s house. The forth interviews was conducted at Oil’s refinery plant.

Table 4-6: The list of Oil’s participants who attended each interview

<table>
<thead>
<tr>
<th>No. of interviews</th>
<th>Date</th>
<th>Designation of participants</th>
<th>Time</th>
<th>Places</th>
<th>Purposes</th>
</tr>
</thead>
</table>
| 1                 | 14/9/11    | 1) Executive Vice President of Corporate Administration & IT 2) A Budgeting Manager | 2 hours | Oil’s head office in Bangkok                | - To describe the objectives of interviews and to get more participants from Oil  
                    |            |                                                      |       |                                             | - To explore why and how Oil implements ABB                              |
| 2                 | 1/12/11    | 1) A Budgeting Manager                               | 1 hour | Department store closed to interviewee’s house | - To determine the design of the cost structure and cost allocation  
                    |            |                                                      |       |                                             | - To investigate the role of a Budgeting Manager in implementing and using ABB |
| 3                 | 8/12/11    | 1) A Senior Manager of Environment and Community Relation | 1 hour | Department store closed to interviewee’s house | - To explore the implementation of ECA and environmental costs  
                    |            |                                                      |       |                                             | - To examine whether ABB have a relationship with ECA                   |
| 4                 | 28/8/12    | 1) Manager of occupational Health & Safety Division | 1 hour | Oil’s refinery plant in Bangkok              | - To determine how staff provide information to Budgeting and which information needs to be provided and how staff use ECA information. |
| 5                 | 10/9/12    | 1) A Budgeting Manager                               | 1 hour | Oil’s head office in Bangkok                | - To confirm the figures of cost allocation and working process which were developed by researcher based on the interview information  
                    |            |                                                      |       |                                             | - To correct unclear and collect further information                   |
The Senior Manager of Environment and Community Relations assisted the researcher interview all key personnel from Oil. As she is the Senior Manager of Environment and Community Relations, a lecturer in ECA and a PhD student she therefore understands the difficulty of conducting research, especially having access to a company.

As shown in Table 4-6, there was more than one interviewee at the first interview because the Executive Vice President of Corporate Administration and IT wanted the Budgeting Manager to be in charge of the subsequent interview. During the interview, the Executive Vice President of Corporate Administration and IT asked questions of the Budgeting Manager and her responses lead to the researcher having an individual interview with her during the second interview. She asked her supervisor to participate in the interview but her supervisor was unable to do so due to prior commitments. She was concerned that she could not answer the questions to the researcher’s expectations which suggest that consideration and humility are part of Thai corporate culture.

The Researcher received a warm welcome from Oil and the interviewees provided information to the best of their ability. However, this style of the interview can reduce the confidence of participants who may not want to express negative opinion in front of supervisors because it might affect their performance evaluation.

Other Data Sources

Apart from the interviews, internal confidential documents were reviewed and public documents were collected. Internal confidential documents of case companies were provided during the interviews such as the manual of cost structure and cost reports; however, a researcher was not permitted to take the documents outside the companies. Public documents as a secondary data were assessed through accessing research journal articles, books, newspapers, conference proceedings, working papers, government reports, government archival records and reports of international organisations for an enhanced understanding of the adoption, implementation and the application of ABC direct and indirect costing methods. During these processes, companies’ websites, annual reports (1998 - 2010) and other public documents (such as government reports, and reports of national and international organisations) from selected companies were collected and reviewed. These kinds of data were used to validate the interview data
thereby to enhancing the quality of data triangulation (Denzin & Lincoln, 2008). As Yin (2009) asserted, the different forms of evidence from various sources should be gathered and crosschecked to increase validity and reliability (Ezzamel et al., 2004; Guba & Lincoln, 1982; Riege, 2003; Wahyuni, 2012).

4.5.3 Transcribing and Translating Data

The interviews were conducted in the Thai language which is the first language of the participants and all were audio-recorded and transcribed. All interviewees allowed the researcher to use an audio-recorder during the interviews. Notes were taken concurrently with the audio-recording in order to avoid unexpected problems which may be caused during the process. Moreover, transcriptions were made in Thai to avoid missing specific meanings and expressions when analysing data. Major and Hopper (2005) stated that translating interviews from other languages into English could diminish the quality of analysis. For transcribing, the researcher summarised the main ideas of each question and collated only the conversations which related to the research topic.

The interview transcripts were sent to the interviewees to validate the recorded interview information. Researcher followed up the validation of recorded interview information through e-mail, telephone and the second schedule of interviews. After the follow up and subsequent meeting for data validation, interviewees assisted the researcher to revise some unclear information and provide deeper understanding. Then, the validated interview transcripts were used for data analysis and were translated from Thai to English by a researcher and a qualified translator. However, some information was not permitted as material for this thesis due to the interviewees’ requirement to protect their confidentiality.

4.6 DATA ANALYSIS

The interview transcripts were coded with a set of emerging themes in line with research questions, literature and theory by using elaborative coding (Auerbach & Silverstein, 2003; Saldana, 2009). The coded data was first analysed through a within-
case approach, and then cross-case analysis was completed. A within-case approach typically emphasises detailed descriptions for each case which is essential for the generation of insight; while a cross-case analysis emphasises searching for patterns (Baxter & Jack, 2008; Yin, 2003). Subsequently, a schema was constructed to retell the participants’ narratives in terms of theoretical constructs (Auerbach & Silverstein, 2003) and this structure is known as narrative analysis (Llewellyn, 1999).

Although Basit (2003) suggests that the use of electronic coding may make the analysing process smooth, the researcher preferred manual coding. Initially, NVivo 9 software was selected to assist researcher in the data analysis phase but it was abandoned for two reasons. First, the transcripts had to be translated from Thai to English. In doing so the contextual meanings generic to the first language were lost. Second, to code data manually by using basic Microsoft Word 2003, was practical and effective in separating the themes and concepts of each case.

4.6.1 Elaborative Coding

Miles and Huberman (1994) assert that two different methods of creating codes are used in qualitative research. The first one is used by the inductive researcher who pre-codes data without any themes to ground any new theories found in the context. This is basically the ‘grounded’ approach advocated by Glaser and Strauss (1967) (cited in Basit, 2003, p. 145). The other method is for the deductive researcher to create a provisional start list of codes before fieldwork. That list is developed from the conceptual framework, list of research questions, hypotheses, problem areas and key variables that the researcher brings to the study. This study was designed on deductive reasoning which expected to use existing theories to explain the studied phenomenon. In reviewing all coding methods which are explained in ‘the Coding Manual for Qualitative Researcher’ written by Saldana (2009), elaborative coding has been used in this study as its attributes fit with the research design.

Auerbach and Silverstein (2003) explain that “Elaborative coding is the process of analysing textual data in order to develop theory further” (p. 104). Elaborative coding begins coding with the theoretical constructs from prior studies which are described as top-down coding. Moreover, elaborative coding is constructed from the adaptive theory
which is developed by Layder (1998) as a critique of the methodology of grounded theory. The coding process into three main steps (Auerbach & Silverstein, 2003) are:

1) Making the text manageable by developing coding themes and selecting the relevant text that is consistent with the themes;
2) Reorganising and reanalysing data coded in the first step by grouping the repeating ideas into the theoretical constructs;
3) Developing theory by elaborating theoretical constructs by showing how themes are consistent with them and organizing themes into meaning units.

For the purpose of this study, the initial themes, which were either derived from the relevant literature or based on a particular theory, were developed. See Table 4-7 shows the initial coding themes for this study and Table 4-8 illustrates the consistency of codes and theoretical constructs in the steps of developing theory.

4.6.2 Narrative Analysis

Narrative is the telling of a participant’s story constructed by a researcher which focuses on anecdotes about individuals or a set of events (Riessman, 1993). Instead of looking for themes that emerge from an account, narrative concentrates on the sequential telling of a story hence there is an emphasis on the expecting and knowing scenes, events, problems and relationships (Stake, 2008). The researcher creates a story about occurrence by describing what the interviewee implies, editing and reshaping what was told, and turning it into a unified story (Riessman, 1993). The narrative flows from coded strategies, themes, characters and events that cut across the interview transcripts and either direct quotes or summaries of speech could be used as examples (Llewellyn, 1999). Creswell (2009) underlines that in narratives, qualitative researchers interconnected identified themes from the coding process to build additional layers of complex analysis into a story line. Moreover, Patton (2002) asserts that narrative analysis, which is one of the interpretive approaches, specifically focuses on studying organisations. He claims that organisational researchers conceptualise organisational life through story making and use organisational theory as story reading and a form of literary critique. The purpose of asking “how” and “why” questions, is to gain further insights into aspects of the narrative (Llewellyn, 1999).
Table 4-7: The initial coding themes

<table>
<thead>
<tr>
<th>Coding Themes</th>
<th>Codes</th>
<th>Research Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Theoretical</td>
<td>Practical</td>
</tr>
<tr>
<td><strong>What factors influence the process of ABC/ABB implementation?</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. <em>Process of ABC/ABB implementation</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Initiation and adoption of ABC/ABB system</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>• Design of ABC/ABB system</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>• Implementation of ABC/ABB system</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>• Use of information from ABC/ABB system</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>To understand how companies implement ABC/ABB in practices through four stages of ABC/ABB implementation.</td>
</tr>
<tr>
<td>2. <em>Factors influencing ABC/ABB implementation</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Influence of changes in competition</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>• Influence of changes in government policy</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>• Influence of changes in technology</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>• Influence of changes in organisational strategy</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>• Influence of changes in organisation structure</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>• Influence of changes in organisational culture</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>To identify factors influencing management perception of ABC/ABB implementation within Thai companies.</td>
</tr>
<tr>
<td>3. <em>Factors influencing the success of ABC/ABB implementation</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Roles of top management</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>• Linkage of ABC/ABB system to competitive strategies</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>• Linkage of ABC/ABB system to performance evaluation and compensation</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>• Internal resources</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>• Training in designing, implementing and using the ABC/ABB system</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>• Roles of non-accountants</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>• The objective of ABC/ABB implementation</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>
Table 4-8: The consistency of codes by themes with the theoretical constructs

<table>
<thead>
<tr>
<th>Codes</th>
<th>Sources</th>
<th>Measurement</th>
<th>Examples of Quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influence of changes in Government policies</td>
<td>Contingency theory</td>
<td>The study looks for government’s actions such as regulations, tax and policies which increase companies’ demand for cost information.</td>
<td>• The Government has a commitment to the World Trade Organisation (WTO) to liberalise the telecommunications industry by the year 2006. This increased more competitive environment for telecommunication industry.</td>
</tr>
<tr>
<td>Influence of changes in Competitive environment</td>
<td>Contingency theory</td>
<td>The study seeks for the changes in economic situations both national and international, competitive situations such as market share, competitors, customers and suppliers which affect companies’ revenue and cost structure.</td>
<td>• Price competition, services in payment method type, especially in innovative tariffs have been designed to respond to customers’ behaviours and accommodate various cost structures, based on a balance between investment costs, revenue and interconnection charges.</td>
</tr>
<tr>
<td>Influence of changes in Technology</td>
<td>Contingency theory</td>
<td>The changes in technologies including production and service technologies, IT technologies, and management technologies which affect companies’ costing systems are coded. The reasons of the changes are also coded.</td>
<td>• The rapid change in technology has become a key factor in competition in the telecommunications industry.</td>
</tr>
<tr>
<td>Influence of changes in organisational strategy</td>
<td>Contingency theory</td>
<td>The study captures the organisational strategies including differentiation, cost leadership and combinations which are set in response to other factors such as changes in economy, competition and government’s regulations. These changes may show the need for more detailed cost information for business decision-making, planning and control.</td>
<td>• Marketing wanted to know the same costs for pricing purposes when in negotiations with customers. Marketing needed to know the minimum price it could offer in a competitive environment.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• In the past, we reviewed mass information and when we wanted to sell in a job lot; we couldn’t sell it at the same price as we sold one number only otherwise we couldn’t compete with our competitors.</td>
</tr>
<tr>
<td>Influence of changes in organisational Structure</td>
<td>Contingency theory</td>
<td>The code focuses on the reasons for the changes in organisational structure both in management and operational levels and the consequences after changes which may affect the costing systems.</td>
<td>• Budgeting and cost analysis was established to communicate between Accounting and Engineering in order to respond to competition. This supported ABC implementation accidentally.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• We designed our department (call centre) based on cost codes which included more than 30 teams.</td>
</tr>
<tr>
<td>Influence of changes in organisational culture</td>
<td>Contingency theory</td>
<td>Organisational culture relates to human resource policies such as training for employees, employees’ remunerations and facilities and also the relationship and communication between organisations and their employees are captured. Besides, the reasons and results of the changes which may reflect the process of ABC implementation are coded.</td>
<td>• The cost information helped staff to improve its working effectiveness and to create active culture.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• We work as a team, we arranged a group meeting which includes staff from accounting and other relevant departments to discuss and share information about their working processes.</td>
</tr>
</tbody>
</table>

[99]
In interpretive management accounting research, narrative has been widely used to describe and understand management accounting practices within organisations (Llewellyn, 1999; Parker, 2003; Vaivio, 2008). Llewellyn (1999), a management researcher who has used the narrative method, insists that narratives provide a construct for accounting and management research through storytelling. Narratives can disclose organisational events, and construct and identify emerging organisational theories. Although it is time-consuming and usually includes a very small number of cases, narrative analysis serves management accounting research for theory testing and development.

For this study, after the coding process, coding themes were interconnected into the theoretical narratives in order to tell the constructed stories which were predicated on existing theories. Narrative analysis was used to describe “why” and “how” Thai companies implemented ABC through the four stages of implementation which is developed by Arnaboldi and Lapsley (2005) including the initiation and adoption, design, implementation and the use of information (described in Chapter 3). Contingency factors and new factors emerged in each narrative that were identified and constructed (see three narratives in Chapter 5, 6 and 7).

### 4.7 RELIABILITY AND VALIDITY CHECKS

Reliability refers to the consistency and stability of a measurement tool; whereas, validity refers to the appropriateness and meaningful of the tool (McKinnon, 1988). The measurement of reliability and validity of research methods is the premise of positivist quantitative researchers who assert that both lead to high quality of research findings (Golafshani, 2003). Quantitative researcher criticise qualitative researchers through asserting they are not independent due to their close engagement with research sites hence findings cannot be valid or reliable (Parker, 2003). Parker (2012) argues that as the different philosophical research assumptions and types of knowledge sought by qualitative researchers, the concepts of reliability and validity are not relevant to the measurement of qualitative research methods and findings.
In response to the criticism, the concept of trustworthiness was introduced to ensure the quality of qualitative research (Guba & Lincoln, 1982). The same aspects of trustworthiness include creditability, transferability, dependability and confirmability which are also used to measure reliability and validity in positivistic research (Golafshani, 2003; Riege, 2003).

4.7.1 Creditability

Moreover, in qualitative research, creditability shares a similar definition with positivist research (Riege, 2003). It is an assessment of whether or not the research findings show a credible conceptual interpretation of data derived from the source (Lincoln & Guba, 1985). Three techniques were used to strengthen creditability for this study. Firstly, the triangulation technique (Guba & Lincoln, 1982; Modell, 2005; Wahyuni, 2012) was used through collecting multiple data sources such as interviews, public documents, company publications and government archival records. Secondly, the research design and data analysis were presented to academics and experts at meetings, school seminars and research conferences on a regular basis (Scapens, 1990). Thirdly, each interview was followed up by e-mail and telephone conversation to validate the collected data and confirm the main themes of interview with the interviewees (Burnard, 1991; Scapens, 1990). A draft of the respective transcribed interview report was given to each interviewee with a request to identify any inaccuracies, misrepresentations or areas of concern. None of the participants suggested any major revisions to the content of the report, which implies that the interview data was properly and accurately transcribed.

4.7.2 Transferability

Transferability is the parallel construct to external validity in quantitative research which includes analytical generalisation (Riege, 2003). Specific techniques used in this study include the use of cross-case analysis (Modell, 2005; Riege, 2003) and a detailed explanation of research sites, characteristics of case organisations and research methodology that have been possibly used in different studies of other industries by researchers (Lincoln & Guba, 1985).
4.7.3 Dependability

Dependability is analogous to the notion of reliability in positivist quantitative research which promotes replicability or repeatability (Riege, 2003; Wahyuni, 2012). It is an assessment of the stability and consistency in the process of data collection, data analysis and theory generation (Riege, 2003). Techniques applied in this study were a) the examination procedure for confirmation of candidature was required by RMIT University to review research design by a panel of experts; b) comprehensive and detailed explanations of the theories used (see Chapter 2), research design (see Chapter 4), and the case study data (see Chapter 5, 6 and 7).

4.7.4 Confirmability

Confirmability, which resembles constructed validity in quantitative research, ensures that the interpretation of data is described in a logical and unbiased manner (Riege, 2003). Techniques applied in this study were the use of multiple sources of evidence (triangulation) (Lincoln & Guba, 1985; Modell, 2005), and the establishment of a chain of evidence (from research questions to conclusions) during data collection to later inspection (Guba & Lincoln, 1982).

4.8 RULES ON THE ETHICS AND CONFIDENTIALITY

The researcher sought ethics approval from the College’s Human Ethics Advisory Network for the interviews of CEOs, directors of accounting, ABC project managers and team members, users and related staff in Thai companies. The interviews were assessed by the RMIT Human Research Ethics Committee in order to keep risk low to research participants.

The participants participated on a voluntary basis and were not influenced by any externalities. Interviewees were informed of the aims, focus, value and benefits of this research as well as their rights to withdraw partially or completely at any time or refuse to answer any questions through the plain language statement and consent form.
All hard data will be kept in a locked filling cabinet and soft data in a password protected computer in the office of the investigator in the School of Accounting at RMIT University. Data files were saved on the University network System (as the system provides a high level of manageable security and data integrity can provide secure remote access). It is expected to publish the findings of this study in conferences and reputable academic journals without accrediting information to the names or identities of the participants who responded to the interview questions. Ethical approval has been granted for data collection from interviewees for the period of 19th April 2011 to 20th July 2013.

4.9 SUMMARY

This chapter outlines the ontological, epistemological and methodological underpinnings of the approach employed in this study. The limitations of mainstream accounting quantitative-based research methodology in studying management accounting practices inspired the use of the qualitative approach used in this study. As the main focus of management accounting research tends to be centred on the explanation of how organisations implement management accounting practices, the need for interpretive methodology was required by this study. Moreover, this chapter discusses the issues of trustworthiness in the selected methodology.
CHAPTER FIVE

CASE STUDY ONE – TELECOMMUNICATIONS COMPANY

5.1 INTRODUCTION

The previous chapters, the literature review, conceptual framework, methodology and methods associated with this study have been presented. This chapter presents the first of the three case studies. The chapter provides a narrative for the motivation and process of ABC implementation by a Telecommunications Company (Telecom). The analysis of findings presented in this chapter is based on contingency theory and the model for the successful implementation of ABC as described in Chapter 2 and 3.

The implementation of ABC by Telecom was investigated by collecting data on the motivation, design, implementation, use of ABC systems and the changes in external environments especially competition, Government policies, technology (related to IT, production, services and management) and organisational strategy, structure and culture which affected the changes in Telecom’s costing systems. The main data collection methods, which consisted of in-depth interviews and documentary and company archival record research, were used to collect data and interpret the implementation of ABC as described in Chapter 4. The findings show that changes in competition and mobile technology were the most influential factors driving Telecom to implement ABC. Moreover, as the Government played an important role in Telecommunications market it indirectly influenced the implementation. Other factors, including changes in organisational strategies, structure and culture which were driven by changes in competition and mobile technology, influenced the success of ABC.

This chapter explains these findings in detail by describing a brief history of Telecommunications business in Thailand (Section 5.2), the background of Telecom
(Section 5.3), the process of ABC implementation (Section 5.4) and evidence of factors influencing the ABC implementation and factors that determined the successful implementation of ABC by Telecom (Section 5.5 and 5.6).

5.2 A BRIEF HISTORY OF TELECOMMUNICATIONS BUSINESS IN THAILAND

Prior to the European presence in Southeast Asia, traditional methods for communication such as smoke signals, sound, fire, homing pigeons and messengers were used in Thailand. According to the historical records of Rattanakosin, William Henry Rid, a British representative applied unsuccessfully for a telegraph wiring concession during the reign of the King Rama IV (Fine Arts Department, 1968). His application was unsuccessful as the Thai King considered the contract was not in Thailand’s best interests.

During the reign of the King Rama V (1875), a maritime telephone service was installed by the Thai military between Bangkok Pier and the mouth of the Samutprakan River (CAT Telecom, 1983). On July 16th, 1883 the Telegraph Department and the Post Office were established and were responsible for operating postal and telegraph services for the Government (CAT Telecom, 1990). In 1886, the Telegraph Department provided telephone services for Bangkok and Thonburi for the first time. In 1898, the Telegraph Department merged with the Postal Department under the name of ‘the Post and Telegraph Department’ (CAT Telecom, 1983).

After the coup d'état in 1932, which changed the form of government structure from Absolute to Constitutional Monarchy, the number of subscribers increased. In 1954, the Government established the Telephone Organisation of Thailand (TOT) as a State enterprise under the Ministry of Transportation and Communications (KoiKun, 2009). TOT is responsible for providing a nationwide telephone service; it has installed several telephone service including public telephones (1972), the multi-access radio telephone system (1978), facsimile (1981) and the Nordic mobile telephone system (1986) (KoiKun, 2009). In 1976, the Government established the Communications Authority
of Thailand (CAT) to provide a more diverse range of telecommunications services (Bunaramrueang, 2007). However, it was generally accepted that TOT provided domestic telecommunications while CAT provided international telecommunications. TOT and CAT acted as service operators as well as regulators.

TOT and CAT grant concessions to private telecommunications companies which enable them to expand services to meet demand. Every concession is implemented under the Build-Transfer-Operate (BTO) scheme. These concessions permit private companies to invest in network construction and service provision and share monopoly benefits in terms of revenue or profits (Bunaramrueang, 2007).

In 1999, as a condition of Thailand’s WTO membership, the local telecommunications had to be liberalised in accordance with free market principles by 2006. In 2002, the Government established the Ministry of Information and Communication Technology (MICT) to establish policies and supervise TOT and CAT (NESDB & World Bank, 2008). In 2002 and 2003, TOT and CAT changed their status to be public limited companies respectively (NESDB & World Bank, 2008), and their existing private concessionaires had to operate their ventures according to the Telecommunication Business Act BE 2544 (2001) (Thai Government, 2001). In 2004, the National Telecommunications Commission (NTC) was established as a result of the 1997 Constitution; it is an independent regulator of the entire Thai telecommunications industry and determines telecommunications development. The NTC’s regulatory functions include granting licenses, spectrum management, supervising network usage and network connection, controlling the standard of networks and equipment, allocating radio frequency, consumer protection, ensuring fair competition, and enforcing the law (NESDB & World Bank, 2008).

The NTC has issued telecommunication licenses to TOT and CAT and licenses to other infrastructure-based telecommunication service providers. TOT and CAT grant concessions to private telecommunications companies and operate their own telecommunication services concurrently.

In summary, the telecommunications market in Thailand is under the supervision of the MICT and the NTC. Thailand’s wireless market is dominated by three cellular
operators; every operator is granted a concession from TOT or CAT through the 900 MHz frequency, the 2,100 MHz frequency, the 1,800 MHz frequency and the 850 MHz frequency. Competition in this sector is intense and caused by the many changes in telecommunication regulations, consumers’ behaviours and mobile technologies. As a result, the number of subscribers in Thailand has continuously increased since 1999 which is shown in Figure 5-1. World Bank’s online database shows that in 2010 Thailand was in the fifth rank of number of subscribers in Southeast Asia following Vietnam, Singapore, Malaysia and Brunei respectively (World Bank, 2011).

**Figure 5-1: Number of subscribers in Thailand per 100 people between 1986 and 2010**

![Graph showing the number of subscribers in Thailand per 100 people between 1986 and 2010.](image)

Source: World Bank’s online database (2011)

### 5.3 BACKGROUND OF TELECOM

Telecom is a Thai own company which was established in 1989 to provide a variety of telecommunications services. The Company operates a cellular mobile telephone network in the 900 MHz frequency through digital GSM technology and provides a digital GSM network in the 1800 MHz frequency through its subsidiary. A frequency of
900 MHz and 1800 MHz are provided through a concession from TOT and CAT respectively in the BTO category. In addition, Telecom also invests in other subsidiaries that include integrated businesses such as import and distribution of handsets, accessories, voice, and data communication service via telephone and broadband, payment facilities via mobile phone, distribution of cash cards, call centre services, and international telephone gateways.

Telecom’s vision is to lead and shape the communications market in Thailand through innovation, customer service, an extensive network, expert staff and an effective company culture. The Company’s mission statement describes four objectives which are to deliver superior and innovative services that will add value enhancements, to provide customers with exceptional customer experience and network quality, to facilitate an entrepreneurial and professional work culture amongst its employees and to increase value for stakeholders and practice Corporate Social Responsibility (CSR).

Over 20 years of business operation, Telecom has become known as a leader in the Thai telecommunications market. This market segment plays an important role in the Thai economy and Telecom has received several awards from high profile business organisations for its outstanding performance. In 2004 Telecom was awarded the Best Manage Cellular Telecommunications Company in Asia and Best Chief Executive Officer in Thailand by Asia money Magazine. In 2009, Telecom was ranked first as the Best Managed Company, first for Best Investor Relations, first for Most Committed to Strong Dividend Policy, second for Best Corporate Social Responsibility and fifth for Best Corporate Governance by the Finance Asia Magazine. Moreover, Money and Banking awards 2010 awarded Telecom as the Best Public Company on the SET. In 2010, Forbes Global 2000 ranked Telecom 1310th among 2000 of the world’s leading companies (DeCarlo, 2012).

In 2010 Telecom was the largest mobile operator in Thailand with 54% of market share revenue, 45% of subscriber market share, more than 97% nationwide coverage and more than 4,000 employees. Telecom has been a publicly listed company on the SET since 1991 and from 2010, has had market capitalisation of approximately Baht 287
billion (USD 8.6 billion). This ranks Telecom among the top five listed companies on
the SET.

5.3.1 Government Influence on Telecommunications Industry

As described in a brief about the telecommunications business in Thailand, the
Government has initiated many changes since the establishment of the Telegraph
Department in 1883. The Government, through its monopoly, focused on providing
adequate infrastructure to develop nationwide communications; it was the capital holder
being able to fund, build and operate telegraph and telephone services. It enacted laws
concerning wire and wireless technologies including the Radio Telegraphy Act BE
2457 (1914), Telegraphy and Telephony Act BE 2477 (1934), Radio Communications
Act BE 2478 (1935), Radio Communications Act BE 2498 (1955) and, Radio and
Television Broadcasting Act BE 2498 (1955) (Bunaramrueang 2009). After providing
telegraphy and telephony services for 70 years, the Government established two state-
owned enterprises; the TOT in 1954 and CAT in 1976 to provide nationwide
telecommunication services (Bunaramrueang 2009).

To increase telecommunication services, the Government granted concessions to
encourage private telecommunication companies through its telecommunication
agencies under the BTO scheme. Telecom conducted its business at the frequency of
900 MHz under the concession granted by the TOT in 1990 for 20 years. In 1996, the
concession was extended by 25 years ending in 2015. Under the BTO concession
agreements, Telecom is required to build and raise capital for investment in the cellular
network, transfer the network ownership to concession grantor, TOT, and operate the
system. The Company is responsible for network engineering, network planning,
equipment procurement and installation, network maintenance, and service
commercialisation. Telecom is also entitled to share its revenue from service to the
concession grantor. Telecom currently pays a total of 30% of its post-paid revenue and
20% of its pre-paid service revenue to TOT and the Government in the form of excise
tax. Moreover, Telecom’s subsidiary was granted a 16-year BTO concession in 1997
from CAT, ending in 2013, to operate the cellular network in the 1800 MHz frequency.
Under the concession agreement, its subsidiary is required to share a total of 20% of its

[109]
revenue from mobile phone operation to CAT and the Government in form of excise tax.

In 1999, the Government made a commitment to the World Trade Organisation (WTO) to liberalise the telecommunications industry by 2006, transforming the market into a level playing field. Since the NTC was established, its immediate and most important task was to draft regulations that paved the way for industry liberalisation. These regulations broadly included interconnection charges and new licensing rules. However, rules, regulations and the policy about telecommunication liberalisation that would create free and fair competition were not finalised until 2006.

In 2006, the NTC officially issued regulations and guidelines regarding the supervision of the telecommunications business operations under the Interconnection of Telecommunications Networks Act BE 2549 (2006) (IC Regulation). The IC Regulation stipulates that every licensed, granted concession under the supervision of the NTC must comply with free and fair competition regulations. Operators who comply with such regulations shall be deemed to have the same rights and obligations as other lawful licensees, namely TOT and CAT. This issuance benefited consumers as well as the telecommunications industry as each operator was able to connect directly and pay interconnection charges according to the actual traffic in its network. This also brought to an end unreasonably low rate charging which had occurred especially with cross-network calls.

However, TOT disagreed with this statement and claimed that it was a means for the NTC to abuse its power as it was not in accordance with the Constitution BE 2520 (1997), the Organisation and Allocation of Spectrum Frequencies and Supervision of Radio Broadcasting Business Act BE 2543 (2000) and the Telecommunications Business Act BE 2544 (2001). Moreover, interconnections could be made since the NTC had not granted a license to Telecom, and, the Company did not own the network. This disagreement might have affected companies that were not able to interconnect or charge for interconnection, and may have result in a delay or the suspension of interconnection to the public sector. Subsequently, Telecom, as an operator, had to comply with the Telecommunications Business Act BE 2544 (2001) and the NTC
guidelines by submitting a Reference Interconnection Offering (RIO) to the NTC. On 1 September 2006, the NTC approved in principle the Reference Interconnection Offering (RIO) and the interconnection charge rate for Telecom and other operators and allowed them to negotiate Interconnection Contracts with each other. An Interconnection Contract between Telecom and two other operators was signed in 2006 and 2007.

Although TOT filed a lawsuit against the NTC at the Central Administrative Court in order to withdraw the announcement on August 31, 2007, TOT issued a written notice to the Company informing it that it should wait for the court decree to be used as a guideline. If the Company complied with the announcement of the NTC prior to the final judgment of the administrative court, TOT would not acknowledge it, and the Company would be liable for such action on February 4, 2008. After consulting with legal consultants, Telecom decided to comply with the Agreements which were in line with the legal provisions currently in force by issuing invoices to collect the interconnection charge from the contractual parties. Then, TOT required the final judgment of the court to negotiate with Telecom. On 30 December 2008, TOT notified Telecom in writing of the result of the negotiations. The decision regarding the rate and calculation method of revenue sharing was not concluded; Telecom was requested to remit its revenue sharing from the interconnection charge from February 2007 to June 2008. This represented Baht 761 million and it had to be received by the 30 December 2008. Since 2010, the interconnection charge issue has still not been finalised.

Moreover, Telecom which has the largest number of subscribers in Thailand (approximately 19 million) is likely to benefit from the revenue increase obtained through interconnection to other networks more than other operators. These regulations signal the beginning of market competition for mobile operators with free and fair competition, which will ultimately benefit the economy and society.

Another issue is the rapid changes in mobile technology. Moving towards 3G technology forced the Government to issue the regulatory framework for 3G licenses as a matter of urgency. Since 2005, the regulatory framework for the 3G license has not been resolved by the NTC.
5.3.2 Changes in Competitive Environment in Telecommunications Industry

Prior to the financial crisis of 1997, the mobile phone market expanded rapidly. Following the crisis and as a consequence of it, expansion dropped from 18% in 1997 to 11% in 1998. By 1999, the market expanded to 17%, and 29% and 144% in 2000 and 2001 respectively. As a result, the penetration rate per population of 100 persons jumped from 3.21 in 1998 to 3.75 in 1999, 4.84 in 2000 and 11.82 in 2001 (see Figure 5-1). At that time, Telecom and Total Access Communication PCL (TAC) were the two major operators in the Thai market with a combined market share of 95%. Other operators included a subsidiary of Telecom, and State operators, TOT and CAT and there was little competition, and the market expanded with a limited number of competitors. However, in 2001, the market became very competitive due to new operators, which included TA Orange (TAO) that operates the GSM 1800 network, and Thai Mobile, that provides a GSM 1900 service. Both companies launched their operations in the first quarter of 2002. Adding to the competition, Hutchison CAT Wireless Multimedia Co., Ltd. was relaunched as a direct competitor of TAC. Hutchison had been expanding its network and improving its services to increase its competitiveness.

In 2002, the competition in the mobile phone market was intense, especially in the price-awareness segment because the TAO cut the price and increased the liberalisation of handsets (IMEI unlocking). These initiatives led to a pricing war and drove the expansion in the mobile phone market. As a result, customers who preferred pricing to quality switched to alternative suppliers. In 2003, the industry launched the ‘Creative Growth’ campaign during which operators competed on quality and the provision of products and services.

Nevertheless, pricing competition still existed because operators needed to design services in response to customer behaviour and accommodate a variety of cost structures, based on a balance between investment costs, revenue and interconnection charges. In 2006, price competition was intense due to the economic rate slow down during which the cost of living continued to rise. Consumers were more careful in their spending habits hence mobile operators focused mainly on pricing strategy, especially
in urban area. Subscribers in rural areas made decisions based on network quality rather than price and as a result, in 2007 the mobile industry grew 29% on the previous year with an increase of 12.25 million net subscribers.

Price competition appeared to be the major factor in determining an operator’s market position and financial situation. Since price competition started in 2002, Telecom lost its market share by 15%; it decreased from 60% in 2001 to 45% in 2008. However, price competition was improved as the main mobile operators were obliged to pay for an interconnection charge to their counterparts in 2008 and this enabled Telecom to retain its market leadership.

Moreover, the rapid changes in the mobile phone market were caused by the changes in consumer behaviour as wireless services led to high demand for smart phone. However, the issuing of the 3G licenses was not finalised by 2005 and Telecom introduced 3G on the 900 MHz frequency in 2008, although 3G works well on 2100 MHz frequency. As Telecom was the first mobile operator to provide a 3G service, it increased its market share from 45% in 2008 to 52% in 2009. Moreover, the mobile phone market, especially in 3G services, has increased rapidly and 2G business has decreased.

5.3.3 Changes in Mobile and Information Technology

Since 1990, Telecom has operated Nordic Mobile Telephone (NMT) and Digital Global System Mobile (GSM) telephone services through the 900 MHz frequency. The NMT system can provide service to only one pair of speakers within one channel 905-915 MHz for reception and 950-960 MHz for transmission. Therefore, Telecom implemented the NMT system during the initial stage of mobile phone service to provide telephone services and installed mobile switching centres and base stations extensively throughout the country. The NMT system is positioned to serve subscribers with basic service needs who live outside metropolitan areas and require nationwide coverage. Telecom completed network installation for the Analogue NMT system to cover nationwide service area since 1992 in line with the expanding upcountry customer base.
Subsequently, the Digital GSM with higher efficiency and more advanced features has been introduced. The Digital GSM enables one pair of frequencies (reception/transmission) to handle the conversation of subscribers through up to 8 access lines at the same time or 8 times more than the NMT. For that reason, Telecom installed the Digital GSM for subscribers in Bangkok and other metropolitan areas that require advanced telecommunication technology. However, NMT technology lost its popularity to newer and more-advanced digital technologies, namely the Digital GSM. A large number of "Cellular 900" subscribers migrated to GSM networks during 2002. Since 1993, Telecom discontinued its NMT technology.

Within three years (2001-2003), Telecom introduced three new mobile technologies. It developed new value added services, particularly services for non-voice applications. In 2000 it had introduced the latest technology in data transmission through WAP (Wireless Application Protocol) Technology such as mobile Banking, mobile Info, mobile Shopping and mobile Messaging. In 2001, Telecom continued introducing GPRS technology which was similar to the Third Generation (3G) of mobile phone standards and technology. Moreover, Telecom invested in the digital GSM technology which is in 2.5 generation stage. The GPRS technology and the digital GSM technology provided a base for the development of 3G technology. By 2002, Telecom launched several innovative Non Voice services which included MMS (a graphic and voice data transmission service) and additional value added services in order to respond more effectively to a wider variety of uses. Subsequently, Telecom introduced EDGE technology which is a high speed 3G technology built on the GSM standard.

In 2004, consumer behaviour changed and more wireless services were needed. In response, Telecom employed a C-Care Smart system to record customer details and manage bills. The Company also implemented Customer Relationship Management (CRM) to manage customer relations through monitoring changing behaviour and Customer Experience Management (CEM) to provide improved in-coming call response. Moreover, Telecom expanded its network capability to deliver effective services to its customers in response to changing trends in mobile phone technologies.
Telecom continued to develop a range of new services and as a key telecommunications operator, encountered competition when newer technologies were introduced. During 2006 to 2007, Telecom was preparing to market 3G technologies; it expected to provide 3G technology however, the licenses were not granted by the NTC to any operators. The Company kept developing staff and technology, planning and budgeting in order to be ready to offer 3G services when the licenses were granted.

In 2008, Telecom launched the Hi-Speed Internet via mobile phone and Video Call Service with High Speed Packet Access (HSPA) technology on the 900 MHz. The HSPA technology can provide speeds that are competitive with other fixed broadband such as those currently offered by ADSL to laptops and PCs. Telecom believes that new technologies offering higher data transmission together with availability, variety and price of multimedia devices will sustain growth of data services in the long term. Telecom was the first operator to launch 3G using HSPA technology which supports high-speed data transmission as high as 7,200 kbps, compared with GPRS or EDGE transmission at 160 kbps.

Due to the delay of 3G licenses, in 2009 Telecom provided the 3G trial service on 900 MHz frequency in the metropolitan area to ensure that the Company was accurate in its belief that this new technology was needed. It found that 3G worked well on the 2100 MHz frequency which reflects the Company’s readiness to roll-out this new technology.

All new technologies which Telecom has installed are able to respond to the demands of customers. As equipment is not manufactured in Thailand, Telecom imports directly from leading telecommunications technology suppliers internationally. An engineering team selects appropriate technology and network components to be installed and configured to achieve the highest level of network quality and optimisation. A multi-vendor network engineering approach was implemented to achieve optimisation of investment costs. Principally, two or more network equipment vendors supply equipment to be installed in one region. Telecom has multiple vendors supplying equipment for the network for the entire country and the benefit of this approach is to safeguard against the dominance of any particular supplier, not only in technological
terms, but also with regards to pricing; all of which should contribute to a higher return on invested capital.

### 5.3.4 Changes in Telecom’s Organisational Strategy

As discussed previously, since 2001 the competitive environment in the Thai telecommunications market is intense. This is due to changes in the domestic economy, telecommunications liberalisation and the changes in customer behaviour in using mobile phones, competitors and mobile phone technologies. As a leader in the market, Telecom’s marketing strategies have focused on improving its network and service quality, customer satisfaction and the placement of new products in order to maintain its leadership. Due to the implementation of corporate governance in accordance with the Code of Best Practices of the SET in 2000, Telecom has attempted to maintain sustainable growth based on a high quality network and services.

Telecom set five key strategic areas which are network quality, product and service expansions, service excellence, privileges and benefits and CSR as follows:

1. **Network Quality**: Telecom goal is to ensure that its network coverage and quality are superior to its competitors. Its networks expanded to provide blanket coverage nationwide including the areas of its competitors. Telecom ensures that all necessary areas, such as communities, business zones, and transportation routes, have optimal network coverage. The Company also enhances network capability to accommodate increasing demand for rapid data transmission.

2. **Product and Service Expansions**: Due to change in consumer behaviour and demands as technology advances, Telecom’s services are segmented to cater to different needs and keep pace with a constantly expanding range of products designed to access such services.

3. **Service Excellence**: Telecom continues to place emphasis on providing quick, efficient, and friendly service to address all of customers’ needs. Its goal is to build brand loyalty and a lifetime relationship with every individual that uses Telecom’s products or services.

4. **Privileges and Benefits**: Telecom strives regularly to introduce further enhance our customers’ benefits with our variety of products and services.
5) CSR: CSR has been a pillar of Telecom’s corporate philosophy since its inception.

From these strategies it can be said that Telecom emphasises **product and service differentiation** strategy rather than a low price strategy. Although price competition seems to be uncontrollable in this sector, Telecom continues to believe that a low price strategy can only create awareness, and that the quality of network and services is the key to success in creating preferences and strengthening customer loyalty.

In order to avoid a price war, Telecom has differentiated itself from other service providers by placing special emphasis on providing a quality service in all operational aspects. A high quality network offering fast connection and extensive coverage, a wide range of services that respond to customers’ needs, extensive service operation and application as well as innovative tariffs that cater for a range of consumers’ behaviour - all of these have made Telecom a successful operator. Telecom has also attempted to accommodate cost restructuring in several areas based on a balance between cost, investment and revenue.

For example, Telecom developed new sources of revenue streams to help renew the subsiding subscriber growth in 2003. The two areas were non-voice services and enterprise business services. It also offered a wider selection of more dynamic price packages for customers to select according to their preference. Moreover, Telecom has always strived to maintain positive relationships with its customers; it was the first cellular operator with a Call Centre in 1997. Subsequently, CRM was initiated, and a dedicated department was set up to handle all relationship management activities with customers. Subscriber base segmentation was initiated to understand and better serve the different needs and requirements of customer segments which enabled Telecom to reach the SME business operators’ market.

5.3.5 Changes in Telecom’s Organisational Structure

As a result of the rapid changes in competition and mobile technology, Telecom restructured its management and operational structures many times in response to the changes in the business environment. For example, during 2000 to 2005, the
management structure of Telecom changed each year however, since 2006; it has remained stable as showed in Table 5-1.

Telecom’s organisational structure can be divided into two main teams which are executive and management. In 2000 and 2001, the executive team included three groups which were the Board of Directors, Executive Committee and Audit Committee. In 2000, Telecom implemented Corporate Governance in accordance with the Code of Best Practices of the SET. The Conduct for Good Corporate Governance is the Code of Best Practice for Directors of a listed company, in terms of the composition of the Board, roles and responsibilities, the appointment of Directors, remuneration, Board and Shareholders' Meetings and submission of necessary reports (SEC, 2012).

Table 5-1: The changes in organisational structure of Telecom between 2000 and 2010

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As a result, in 2002 Telecom added two more executive groups to the executive team which were the Remuneration Committee and the Nominating Committee. Since 2002 Telecom has had five executive groups.

In 2000, the management team consisted of the Chairman of the Executive Committee - Wireless Communications, Chief Operating Officer, Executive Vice President - Service Operation, Vice President - Engineering, Vice President - Information System Support, Vice President - Wireless Controller, Vice President - Marketing, Assistant Vice President - Wireless Controller, Vice President - Accounting and Finance Manager. In 2001, the Vice President and the Chief Operating Officer were not included in the management team. Telecom appointed the Senior Executive Vice President - Wireless Corporate Planning, the Executive Vice President - Marketing, the Acting Executive Vice President - Service operation and the Chief Finance Officer - Wireless Communications to the management team.

In 2002, the Executive Vice President and Senior Executive Vice President-Wireless Corporate Planning did not join the management team which consisted of the Executive Vice Chairman - Future Business Opportunities, the President - Wireless Telecommunications Business, the Chief Technology Officer, and the Chief Customer Champion and Terminal Business Officer. In 2003, Telecom restructured its organisational structure by combining IT and network communications technology, and dividing them into solutions and operations in order to offer precise and effective services in response to its customer demand. It appointed the Executive Vice President - Solutions and Executive Vice President - Operations to lead the Company.

In 2004, all Executive Vice Presidents who had joined the management team in 2003 and the Chief Finance Office were not included in the management team. In 2005, Telecom appointed the Chief Audit Executive from the Audit Committee and the Chief
Finance Office to the management team. Furthermore, Telecom restructured its marketing management unit to further promote service efficiency and customer service by setting up specialised units comprising the four main working groups. The aim was to bring service to customers, set strategies and marketing plans to manage customer relationships, ensure service development and support, and coordinate and assess service standards.

In 2006, Telecom did not include the Executive Vice Chairman in the management team. It promoted the Chief Market Officer in 2006 and the Chief Executive Officer in 2007. In 2009, the Executive Vice Chairman - Future Business Opportunities, President and Chief Technology Officer were not included in the management team; however, the Chief Operating Officer was included.

5.3.6 Telecom’s Organisational Culture Building

Telecom realises that its success and strength, to a great extent, comes from a high standard of professionalism among its human resources (HR). Equally important is lean and flexible organisation that is quick to effectively respond to changes and new challenges. Telecom thought that it owes its outstanding performance to its highly qualified team of management who are able to envision and implement the corporate strategy. Recognizing human capital as the most valuable asset of the company, Telecom is committed to investing in HR by offering various training programs and reasonable benefits to staff at all levels and creating fortunately working culture.

1) Training programs: Telecom provides training programs that develop the skill and knowledge of its staff with the objective of providing best customer services and the ability to respond effectively to future changes. For example, Telecom assigned engineers and technicians from Ericsson, Nokia, Siemens, Mitsui and Huawei to give advice and technical assistance to the Company’s staff in order to enhance their technical and operational skills. Telecom developed the “Mobile Spirit” project by inviting front-office staff from the mobile shop to attend a seminar on optional programs and sales techniques to offer advice and suggestions to local customers.
Moreover, Telecom realised that business success is based on the retention of high-calibre executives and staff committed to their work and targets. In 2003, Telecom experienced less key executives and staff loss to its competitors. However, the recovery of the national economy which exceeded the forecast of six per cent widened the external labour market and increased the possibility of losing key executives and professional staff. In response, Telecom developed skills and the most suitable training programs for management to move forward successfully, enhanced inter-staff and inter-departmental relationships, and increased the recruitment of quality candidates who shared the corporate vision. Telecom launched the “Talent Development Program” and reviewed the compensation package to fit with each skill group. It was not only an effective tool for staff retention but also motivated employee to be more efficient and productive.

In 2009, Telecom established three training centres, which were well equipped with modern learning tools for the purpose to developing its HR in the most effective and efficient way. The 3 training centres were as follows:

- Service Training Centre focuses on developing ability and service skills in order to continuously improve customer experience to over 28 million customers,
- Technical Training Centre focuses on enhancing technological and technical skills especially for the transition to a 3G service, and the
- Management Training Centre which focuses on coaching groups of talented employees to become expert in each area, supported by supervisors and including job rotation. The employees also gain service knowledge by joining a seminar with leading originalions from within the country and overseas.

2) Employee benefits: Telecom offers benefits and privileges for staff and their families under the Flexi Benefit Policy to best meet their needs as follows:

- Employees’ remuneration: Telecom is committed to manage remuneration fairly and pays for person, performance and position. Telecom conducts research with other leading companies to further improve its remuneration conditions. In doing so, experienced individuals and young talent are attracted to the Company.
For example, Telecom operates a provident fund for employees and relevant group companies. The provident fund was established and registered in accordance with the Provident Fund Act of BE 2530 (1987). The registered provident fund plan was approved by the Ministry of Finance on 23 July 1990. Under the plan, employees must contribute 3% - 7% of their basic salaries, to be matched by the Company.

Telecom also approved the issuance and offering of warrants to purchase the Company's ordinary shares to directors, employees and advisors as a new ESOP in 2001. The objective of the program is to compensate and motivate the directors, employees, and advisors to perform their duties in the best interests of the Company. Not only could this play an important part in retaining talent but it will also be of long-term benefit to the Company. The overall program consists of five plans over a period of five years. The Company will issue and offer warrants to directors, employees, and advisors of the Company once a year, for five consecutive years. The terms of warrants issued each year will not exceed five years from the date of issuance, while other details of warrants will be similar for all five issuances.

Telecom permitted the directors and employees of its subsidiary to benefit from the Special Reward Program once a year for five consecutive years. The rights will be exercised after the first year and within five years after the grant date. Calculation of the Special Reward Program will be based on the improvement of the subsidiary’s operational performance on the exercise date compared with that of the grant date to the subsidiary. However, such programs will not exceed each person’s budget.

- Other benefits: Telecom organised several activities and facilities to enhance the working environment for employees such as annual health checks, a nursing room and permanent doctors, medical fees, health insurance and life insurance, scholarships for employee’s children, a Company cooperative, gift baskets for patients in hospitals, wedding gifts, aid in case of natural disaster, cash support
for the family of deceased employees, the right to take leave on birthdays, leave to take care of ailing family members, and a health club for employees.

3) Working Culture Programs: Telecom has developed a dynamic working culture which includes the encouragement of teamwork, creating opportunities and continuously increasing the competency of employees. Many programs and activities are arranged to build corporate culture.

Telecom started creating its organisational culture through recruitment programs. The Company launched its ‘Step to Career Road’ campaign through co-operation with leading educational institutions in order to access resources and provide opportunity to those with talent. The Company also initiated the ‘Hiring the Best’ program which trains HR staff in interviewing skills for recruitment purposes. New employees are trained to believe in and work with the ‘FAST MOVING principle. ‘FAST MOVING’ is a working creed and an acronym for - F: Forward Looking, A: Accountability, S: Service- minded, T: Teamwork, M: Mentality, O: Openness, V: Vision Focus, I: Initiative and Improvement, N: Non-Bureaucracy, and G: Guard.

Moreover, Telecom hosts a ‘People Excellence’ event to empower employees with three fundamental concepts: Self, Team and Organisation. This event facilitates self-development, teamwork and encourages the use of knowledge in the formulation of the organisation’s direction and policy. Employees are encouraged to respond positively to customers’ demands and needs and to share views and experience through coaching programs. Senior employees assist junior staff through advice and support which in turn creates a supportive working environment. Moreover, employees have opportunities to assist the community as volunteers through the Company’s CSR program that includes rural school development, service projects for charity and the Global Warming campaign.

For employee performance assessment, Telecom uses Key Performance Indicators (KPIs) and Balance Scorecard as performance assessment tools. KPIs consisted of four areas of assessment which are: finance (such as revenue per service number, net profit and operating cost), customer service (such as call quality and customer satisfaction), internal process (such as network recovery time and network fault) and employee (such
as HR turnover and retention rate). Moreover, Telecom uses a 360 degree assessment of leader attributes. Employees are assessed by managers, colleges and supervisees who work in the same department with them and departmental units. This provides a fair assessment of each employee, identifies their strengths and weaknesses and the corporate working processes concurrently.

These programs create effective communication channels throughout the organisation. Important information can be transferred from management to employees rapidly and directly from employees to management. The Company believes these programs create a "Great Place to Work".

5.3.7 Accounting and Costing System of Telecom

Before 2003, Telecom did not have a professional costing system. The Accounting Department only prepared standard financial statements following accounting concepts and accounting standards. Due to competition in the telecommunications market, Telecom needed costing information with high accuracy and timeliness.

Interviewee 1-Telecom explained “We classified all transactions into five main accounting groups including assets, liabilities, revenues and expenses and then all transactions were recorded and posted to General Ledgers. It was the same as preparing financial statements and we did not calculate costs separately. Also, the classification of transactions was based on accounting concepts as we classified transactions and assigned costs to cost centres based on function. It helped us to know how much money each department used and what purposes it was used for. These are 2 ways we used to manage our transactions. Each department estimated their expenses and prepared investment budgets, and then evaluated their effectiveness of using money by comparing estimated and actual expenses. In the past, we did not calculate cost per products or services and we knew only total costs.”

As a mobile operator Telecom’s core business is to provide mobile telephone services and sell mobile phones and accessories. Therefore, Telecom’s cost structure consists of the cost of rendering services and equipment rentals, revenue sharing expenses, cost of goods sold, and selling and administrative expenses. Costs which relate cost of rendering of services and equipment rentals are amortisation of assets under the
Agreement for operation, amortisation of intangible assets, amortisation of other assets and loss on obsolete spare parts for mobile phone network maintenance. Revenue sharing expenses are annual revenue sharing which Telecom has to pay TOT in accordance with the Agreement at the percentage of annual revenues and any benefit from the mobile phone service prior to deducting any expenses and any tax or the minimum annual revenue sharing stipulated in the Agreement. Cost of goods sold occurs from selling mobile phones and accessories. Selling and administrative expenses include marketing expenses, depreciation on plant and equipment, personnel expenses, and doubtful accounts and bad debts.

5.4 THE PROCESS OF ABC IMPLEMENTATION BY TELECOM

5.4.1 TELECOM – Stage 1: Initiation and Adoption

Telecom was established in 1989 to provide a wide variety of telecommunications services. Company’s 1998 Annual Report states that it conducts its business at a frequency of 900 MHz under a concession from the TOT in the category of BTO for 25 years ending in 2015. When Thai economy recovered after the economic crisis of 1997, the mobile phone industry growth rate peaked at 22%. To maintain existing customer base and to increase new customers, Telecom’s marketing strategies focused on improving its network and service quality, customer satisfaction and the innovation of new products. Due to the implementation of corporate governance in accordance with the Code of Best Practices of the SET in 2000, Telecom was confident about creating sustainable growth based on a high quality network and services.

According to information from Company’s Annual Reports between 1999 and 2002, the Thai Government had a commitment to the WTO to liberalise the telecommunications industry by the year 2006 in order to create free and fair competition under the provisions of the Thai Constitution of 1999. Liberalisation of telecommunications led to an increase of competitors and a dramatic expansion in the mobile phone market. The IMEI was unlocked in 2002 which liberalised handsets and triggered high competition in the market, especially in the price-awareness segment. Existing customers who
preferred pricing to quality may have switched to other systems due to low usage and
go opportunity to save on bill payments.

Also, a new competitor cut prices which led to a pricing war in 2002. Other companies
in the telecommunication industry thought this strategy was not sustainable in the long
term. Therefore, they launched the ‘Creative Growth’ campaign during which operators
competed on quality and over the variety of products and services. Nevertheless, pricing
competition has continued since then.

In addition, the rapid change of mobile technology changed customers’ behaviour to
wireless services (using internet via mobile phone). Telecom had to invest in new
technologies in order to respond to customer’s needs and to retain market leadership.
The growth of the network led to a dramatic increase in operating expenses (indirect
costs) and in engineering costs that included depreciation of communication tools and
equipment, refuse disposal, maintenance and engineering salaries.

The marketing department also wanted cost information for setting strategies in
response to the changes in the competitive environment but its existing MAS was
inadequate for it. The following statement is from Interviewee 1-Telecom, who said:

“As far back as 2003, competition was high in the telecom market and our Marketing
Department wanted to know the lowest costs of products and services for us to be
competitive. Unfortunately, we did not have much cost information available then”.

Not only Marketing, but managers from other departments also needed more accurate
cost information for cost control and investment appraisal.

Prior to 2003, Telecom did not have a professional costing system. The Accounting
Department only prepared standard financial statements. As the statement of
Interviewee 1-Telecom, all business transactions were analysed, recorded and posted to
the relevant accounts such as assets, liabilities, equities, revenues, and expenses.

Telecom lacked complete information about individual costs incurred by each
department and some costs were assigned to cost centres which had not created them.
As Interviewee 5-Telecom said
“In the past, costs of the IVR (Interactive Voice Response) System were assigned to more than 40 cost centres in the Call Centre Department. In fact, the Personal Assistant Team did not consume these costs because customers contacted the Team directly without going through the IVR system.”

At this stage, staff of Telecom could only observe the total cost of services that included total selling and administrative expenses. Total cost was not calculated in services (units) and was therefore difficult to use the total cost information for decision-making, planning and controlling.

In 2001, Telecom started to restructure some parts of its organisational structure in response to the rapid changes in competition and technology. An Interviewee 4-Telecom stated that in the past, Telecom had only voice service and since the increase of data services, it has installed an SMS and data network for serving SMS, data and MMS services. Therefore, Telecom needed to change its costing model due to the development of mobile technology and the changes in customer behaviour. Telecom prepared for changes in the costing system by assigning key staff in each department to document working processes (see Figure 5-2). The Chief Financial Officer (CFO) and the marketing department had a meeting with the accounting, engineering and IT department about this problem. The consensus of the meeting was the need for an effective costing system such as ABC that could provide accurate and useful management information. Telecom pushed forward the implementation of ABC to the design and implementation stages.

Figure 5-2: Telecom’s time frame for the implementation of ABC

Source: Prepared by the researcher based on Telecom interview profile

During 2001 and 2002, the company started to design the costing model, input data and check output data and test the model. Then, the ABC team reported the output to Top
management. Top Management (including the Vice Presidents of Finance, Accounting, Engineering and Purchasing) made suggestions about the costing model and the need to get more specific and authoritative information. From 2003 to 2006, the ABC team revised the costing model and made sure that it met Top management’s needs and suggestions. During this time, staff who knew about ABC, moved to other departments or resigned. As a result, it took time for the revision process to be completed. The first set of the cost information was ready to use in 2007.

5.4.2 TELECOM – Stage 2: Design

Staff in the accounting, marketing, engineering and IT departments were assigned by their managers to participate in a project of implementing a new costing system. Staff who had been selected knew about the intimate workings of their departments and thus, their knowledge would be essential to the design of a costing model based on the ABC concept.

Top management, who knew the ABC operating process and had experience of it, gave the ABC team a basis of ABC. Once the team had an overview of the ABC concept top management decided to use accounting software for cost allocation. Well-known accounting software called Oros\(^1\) software was selected based on a consensus of top management and staff in the accounting department. They considered the reputation of each software package and that of the manufacturing company, software ability, installation methods and pricing in order to select the most effective one for them.

The ABC team was trained to use Oros software by consultants of Oros Company. The basis and design of ABC including identification of activities and a selection of cost drivers were also taught. Then, the ABC team designed a costing model which they discussed with colleagues and managers from each department to adjust and confirm its suitability. The confirmed model was discussed with staff in the accounting department to ensure it could provide the right output. The completed model was presented to top management for permission to continue to the next stage of the implementation process.

\(^1\) Oros is an activity-based costing and performance management software which provides integrated activity-based cost modeling, scorecarding/performance measurement and planning capabilities enabling organisations to increase profits, seek growth opportunities, reduce costs, and streamline operations (SoftScout, 2011).
Telecom found that the activities and cost drivers of some departments during the design stage process was difficult to identify and these threatened the full implementation of the ABC system. The departments that could identify activities and cost drivers made an attempt to follow the ABC concept as they knew it would increase efficiency. Other departments that could not follow the ABC concept continued using the functional costing as previously mentioned and because of this limitation, accounting staff did not want to describe that every section of Telecom used the ABC system.

To find and select cost drivers as input data for the new costing system, Telecom considered two basic conditions. Firstly, cost drivers should be identified from existing information. Secondly, if these cost drivers cannot be found in the existing information, the ABC team would create a new way to collect them. However, it must be cost beneficial to collect new cost drivers; if it was difficult or costly to find such data then, the ABC team would find other sources to provide cost sensitive and quality data. Moreover, cost drivers would be updated when the operating processes were changed and the changes would affect the cost drivers. For example, an Interviewee 4-Telecom said,

"In the engineering department, there is a huge number of network equipment. Some have lots of sub-equipment or are able to perform more than one function. It is difficult to identify activities and select cost drivers, thus we focus only on the main equipment that causes significant costs."

Due to the complexity of network equipment, the engineering department designed the costing system. Voice, SMS, data and MMS are sent to a Base Transceiver Station (BTS), and then onto a Base Station Controller (BSC). Subsequently, each service is sent separately to its core network. Voice is sent to the Mobile Switching Centre (MSC), SMS is sent to the Short Message Service Centre (SMSC), data and MMS are sent to the GPRS switching centre which includes Servicing GPRS Support Node (SGSN) for data and Gateway GPRS Support Node (GGSN) for MMS (see Figure 5-3).

The costs of Engineering are capital expense (CAPEX), operating expense (OPEX), selling, general and administrative expense (SG&A). CAPEX represents the investment
in telecommunication equipment such as radio parts, site facility, core network (BTS, BSC, MSC, SMSC, SGSN and GGSN), transmission, and antenna and access. OPEX includes maintenance, rental (electric equipment, site, transmission, bandwidth and pole), and electricity. Staff salary and depreciation of office equipment are included in SG&A.

**Figure 5-3: Telecom’s network flow**

Source: Prepared by the researcher based on Telecom interview profile

Engineering costs are allocated to three main activities which are voice, SMS and data service. Depreciation of radio parts, site facility, antenna and access, rental and SG&A expenses are allocated to each activity based on the proportion of voice-time slot and/or SMS and/or data set by an engineer. Depreciation of transmission and maintenance are allocated to each activity base on the volume of subscribers to each activity. Depreciation of SMSC is directly allocated to SMS and depreciation of the core network and SGSN are allocated directly to data service. Subsequently, the costs of these activities are allocated to each service (cost object), such as voice, SMS, data, Valued Added Service (VAS), MMS and GSM, based on the subscribers’ minutes of usage (see Figure 5-4).

In the past, the call centre department used total costs of the department to assess its work efficiency. After adapting ABC concept to the new costing system, it found out that the nature of training agents and servicing customers (providing information to customers) were different.

As Interviewee 5-Telecom said “A key task of the call centre is to receive calls from customers. Customer satisfaction and the number of received calls are KPIs for our department. However, our performance in work assessment was worse at that time which was in contrast to the evidence. Finally, we found out that we had spent a lot of
money each year in training new agents which caused the high total cost of our department and this cost did not relate to our main task. Then, we decided to separate training activity from our main task and set it as one of our cost centres. Thus only costs relating to our main task are used for work assessment.”

**Figure 5-4: An example of cost allocation in the Engineering Department**

Source: Prepared by the researcher based on Telecom interview profile

The design of the ABC System in the Call Centre Department is the second example of how Telecom assigns indirect costs to the cost object. The Call Centre classified cost objects based on its operational functions which include more than 40 teams. The teams handle GSM, One-Two-Call, billing, promotions, web multimedia, international languages, serenade, personal assistant, training and IVR.
Figure 5-5: An example of cost allocation in the Call Centre

Activities
- Staff costs of QA & IT
- Monitoring call quality
- Volume of QA & IT works for each call center team

Cost Drivers
- Supporting call center
- Receiving calls
- Number of call agents in each call center team

Cost Objects
- GSM team
- Prepaid team
- Billing team
- Promotion team
- Web multimedia team
- International Languages
- Serenade team
- Personal assistance (PA)
- IVR team

Indirect Costs
- Staff costs of Call Center
- Staff costs of Admins & HR and utilities

Training expenses
- Number of staff of each team who attend the training program

Maintenance and depreciation of specific softwares and office equipment
- Volume of calls

Cost per Call
- Inter-charge costs will be added to Promotion team = cost per call of Billing team x number of calls that Billing team helps Promotion team
- Number of calls For helping other teams
- Net Cost per Call

Source: Prepared by the researcher based on Telecom interview profile
It remains the case that the main activities of the Call Centre Department are to provide information services to customers and the derived cost information showed the majority of costs are incurred from labour hire, training and running system. Most indirect costs are incurred through maintaining a support team or back office that included staffing costs for call agents, Quality Assurance (QA), administration, HR, IT expenses related to supporting systems (Knowledge Base Management: KB), training expense, maintenance and utilities. To assign indirect costs to cost objects is dependent upon on the functions the supporting team performs for the operating team. Figure 5-5 shows how indirect costs are assigned to cost objects in the Call Centre.

QA and IT staff are responsible for monitoring the call quality of the Call Centre and therefore, the staff costs of these departments are based on the number of QA & IT personnel working for each call centre team. QA and IT staff record their work on time sheets each month and monitor the quality of calls from the One-Two-Call and GSM Teams. Subsequently, QA staff costs are assigned to the Prepaid and GSM team based on the frequency of work staff is assigned. Administrative staff and HR staff are responsible for supporting the Call Centre teams and call agents are responsible for receiving calls. Therefore, staff costs of the Call Centre, Administration, HR and the cost of utilities were assigned to each call centre based on the number of call agents in each team. Training expenses are assigned to each Call Centre team based on the number of staff attending training programs. Costs of maintenance and depreciation of specific software and office equipment are assigned to each team based on the volume of calls.

In addition, each team could receive inter-charge costs when it asked staff from other teams for assistance in receiving calls. For example, the billing team helped the promotion team in receiving calls. Inter-charge costs (cost per call of the billing team is multiplied by the number of calls that the billing team received for the promotion team) was added into the cost for the promotion team. It was deducted from the costs of the billing team. Then, the costs for each team were divided by the number of calls that each team received and number of inter-charge calls (depending on the team) in order to find the cost per call.
With reference to the IT Department, it maintains and upgrades IT systems for each department across the company (internal customers) and provides IT services to customers (external customers). Providing IT services to internal and external customers is identified as a main activity of the IT Department. The costs of the IT department consist of staff and IT systems. The initial cost of IT staff is allocated to each department (internal customers) based on its volume of IT work. Subsequently, the cost is allocated to cost objects based on the cost driver used by each department. Furthermore, as IT staff work for Engineering, the staffing costs are first assigned to an activity cost pool for supporting Engineering based on the volume of work IT performed for it. The costs of this cost pool are subsequently assigned to cost objects by using the same cost driver as that used for engineering staffing costs. IT staff record each proportion of their project work on a time sheet. The time sheets are sent to Accounting at the end of each month. The number of projects is dependent by Top management’s requirements and the significance of each project (see Figure 5-6). Moreover, IT staff provides services to customers such as collecting, billing and fraud checking service. IT staff cost are allocated to external customers based on the volume of its work for this segment and allocated based on the volume of subscribers who use each service.

The cost of the IT system is directly assigned to each department that uses it and it was simple to identify users as Accounting predicted. The costs which are incurred when IT staff work for the back office are allocated to in-house services.

When the ABC team completed the design of the costing model, top management hired a consulting company to design an alternative model to compare with its own for validation purposes. Top management used the costing model from the consulting company as a benchmark in order to confirm the model designed by the ABC team. The output of both models showed subtle differences. Thus top management decided to use its own model rather than the model recommended by the consulting company.
**Figure 5-6: An example of cost allocation in the IT department**

Source: Telecom’s interviews, prepared by researcher

### 5.4.3 TELECOM – Stage 3: Implementation

After completing the design of the cost allocation system, the input data (including indirect costs and cost drivers) for the new costing model was collected from the existing data warehouse (including SAP\(^2\)), specialist software and manually collected from each department. SAP is used as a main accounting information system. The specialist software was installed for collecting input data for the new costing model because the existing data warehouse could not provide complete input data. The data from the existing data warehouse and the specialist software was uploaded into and processed by Oros software in order to implement the new costing system. However, some indirect costs and cost drivers had to be rearranged or recalculated before being

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\(^2\) SAP is a client/server enterprise resource planning (ERP) system, started in 1972 by five former IBM employees in Mannheim, Germany, is a powerful technology to integrate various business functional areas and can address or facilitate changes in business processes (Bancroft *et al.*, 1998).
uploaded to Oros. For instance, indirect costs such as QA and IT salaries, electricity and maintenance were transferred directly from SAP to Oros. A Cost driver, such as the proportion of the use of voice, SMS, data and VAS by customers in each service area was collected from the engineering department.

The responsibility to transfer data from data warehouse and specialist software to Oros was undertaken by the IT department. To collect some data from each department was undertaken by the accounting department. Once each department was familiar with the system, it had to prepare and send data to Accounting for allocating costs as a routine task.

During the first period of implementation, it was difficult to collect input data due to the lack of participation from other staff in Telecom. As a result, the project had not progressed as much as the ABC Team expected by the end of the year. This quote from Interviewee 4-Telecom describes the experience,

“Normally engineers like working with machines; but hate collecting data. When we were asked to get some data, we thought they were disrupting our work. The happened during the period of network growth and most engineers were very busy. They did not realise the benefits of collecting data.”

The ABC team had to find other ways to collect data and asked other engineers who knew about the data they wanted, to collect it. Then, the team reported this problem to Accounting and suggested that the ABC project needed to be formalised to provide it more authority.

The ABC team found that this problem was a result of the informal nature of the ABC project. At the time, only ABC team members and few staff knew about the project. The objectives of the project were unclear and other staff in the Company did not participate in it. These problems had been considered by top management and as a result, formalised the status of the ABC team. All staff were informed about the new costing system project and requested to support it by providing adequate and accurate information from the Company’s respective departments. Consequently, there was a high participation rate from every department to support and provide information to the project.
Moreover, Telecom restructured the organisational structure by establishing a sub-department that was called the Budgeting and Cost Analysis department in order to support the engineering department and respond to the rapid growth of competition and technology. This reorganisation was completed before the implementation of ABC.

The sub-department was a means of reducing the problem of communications between the engineering and accounting departments. During the growth of the network, operation expenses dramatically increased and top management assigned Engineering to do budgeting in order to control costs. Engineering and Accounting experienced inter-departmental communication difficulties because they had different goals.

Interviewee 4-Telecom said “In the past, it was difficult for an engineer to communicate with purchasing staff. An engineer wanted to invest in good quality of network equipment whereas, purchasing staff wanted to save costs. No one could mediate between them.”

Therefore, the sub-department acted as a mediator to explain what Engineering wanted to Accounting and what Accounting wanted to Engineering. Engineering and Accounting developed a better understanding about the needs of each other. Another benefit of the sub-department was that Engineering became willing to support the implementation of the project.

All collected data was checked and analysed by the accounting staff and rechecked with the originating department before uploading the input data into Oros.

5.4.4 TELECOM – Stage 4: Use of Information

The output from the new costing system was in the form of costing reports which would be sent to every department. No one was interested in using the information from the first set of outputs except top management. Once the highly competitive and rapidly developing telecom technologies (e.g. smart phone, 3G technology and video calls), were expedited top management allowed every department to design its own response to these new environments.
Interviewee 2-Telcom said “Price competition within the Thai Telecommunication business is aggressive. The price of mobile services in Thailand is the third cheapest in the world behind China and India. Therefore, we focus on demand, supply and the market for pricing.”

Finance and Marketing use the costing information for pricing strategies. Due to the highly competitive environment of telecommunication, Telecom cannot set its own price or mark-up price. Telecommunications industry is an oligopoly and Telecom is a market leader. In order to retain its existing customers, Telecom has to set price based on demand and cost information and cost information helps Telecom know its competitive ability. Then, it can decide if it will make a profit and be competitive in the market. Although Telecom has already known that it will not get any profit from some services, it still has to launch them. The costing manager asserted that Telecom focuses profit and loss on total performance rather than for each service.

To set the price of products and services, the relevant departments work as a team. Firstly, Marketing proposes a new service project. Secondly, Engineering evaluates the project in terms of network capacity and the need of specific network investment. Thirdly, Finance analyses the profit and loss of the project and evaluates the project. Finally, top management makes a decision on the project.

Top management uses the information for business strategies, planning for new investments and for the control of operating costs. Other departments and sales outlets use cost reports to find non-value added costs and to identify inefficient activities. The new costing system helps Telecom reduce non-value added activities and costs, and to improve its operational effectiveness. For instance, the service shop also had high staff cost. Telecom had to pay staff working in the service shop a high salary because they need high competency levels to provide good customer service. At the time, the staff was responsible for customer payment and did not need too much knowledge. Telecom solved this problem by introducing an automatic payment machine called ‘Kiosk’ to customers. Subsequently, it assigned staff at the shop to provide customers with a variety of mobile services - selling phones and packages, providing mobile and service information and repairing mobiles. That way, Telecom can serve more customers,
improve customer satisfaction and increase revenue. Top management played an important role in encouraging this change.

In the past, the cost of the call centre was high. When the Call Centre tracked cost information, it found the call agents’ work did not reach full capacity. The Call Centre Manager created an extra activity for call centre teams that enables them to help each other receive calls, when they have free time. That way, Call Centre can increase a call centre’s performance and save staff costs at the same time.

Interviewee 5-Telecom said “We cannot reduce total costs but we can reduce costs per call by improving our productivity. We improved our working processes in order to reduce handling time. If we can reduce only 15 second minutes in each call, we can action more waiting calls.”

Moreover, Call Centre Managers also decided to use IVR as an alternative to employing call agents as costs would be further reduced costs and good services to customers retained. The Call Centre furthermore used cost information for benchmarking and pricing because it provided services to outside organisations and these can help Telecom to evaluate its competitive position and apply suitable strategies.

Other departments used the cost information “to control costs, increase revenue and evaluate costs in various dimensions,” said Interviewee 2-Telecom.

Interviewee 1-Telecom said that, “Service Shops want to know how many costs they have consumed as they use cost information to improve their effectiveness and reduce their costs.”

As a consequence, Call Centre is considered as the most efficient department for gathering and using cost information to achieve greater operational efficiency a lower costs. Engineering also uses cost information to control costs and to make decisions about investment in infrastructure and the network.

Figure 5-7 represents movement in revenues, cost of services, equipment rental, cost of sales and cost of administration collected from the Annual Report 1998 to 2010. Revenue declined from 2004 to 2006 because of the pricing strategy which was used by
a new competitor. Cost of services and equipment rental was dependent on the contract made with TOT. The process of ABC implementation had run between 2000 and 2004 and since 2006, the cost information has been used across the organisation. It can be seen that cost of sales and cost of administration continued to slightly decrease.

**Figure 5-7: The proportion of revenues and key costs of operation by Telecom from 1998 to 2010**

![Telecom Financial Information between 1998 and 2010](image)

Source: Telecom’s Annual Reports from 1998 to 2010, prepare by researcher

Despite the fact that this project has been completed, the company did not provide any rewards to the ABC team. The employees believed that if they were successful the Company’s profit would be greater and as a result, they would receive increased bonuses at the end of the year. Moreover, Telecom used KPIs for work assessments as main indicators and Balance Scorecard. ABC information was used to set KPIs for work assessment. Employees were 360 degree assessed by their colleagues from within and from external departments as well as from their managers twice a year.

Bonus is paid based on the Company’s performance and employee performance evaluation. All activities related to the enhancement of the Company’s benefits, are included into the performance assessment at the end of the year. Bonus is paid based on departmental performance and the managers of each department are responsible for
evaluating staff performance and distributing bonus. Although Telecom used 360 degree assessment, employees perceive that the assessment and bonus payment is unfair because managers make these decisions.

An Interviewee 4-Telcom asserted that “my manager was the most powerful in the work assessment. He used his own judgement rather than any proper assessment forms; even though, HR encouraged him to use them. This is because he is an engineer; he is not a manager. He knew only how to fix machines; but, he did not know how to manage people”.

An Interviewee 4-Telcom also claimed that he and his colleagues work as a team but they receive bonuses as individuals and employees who work in the same department do not receive bonus based on the same standard. However, as shown in its 2003 Annual Report, Telecom experienced less key executives and staff loss to its competitors but the downside of this practice was the protracted ABC implementation process because employees were not willing to do extra work without any increased compensation.

Over the past eight years of the implementation of the costing system, the team accepted that new costing system was built on the ABC concept but was not a full ABC system. The complexity of telecom technology made it difficult to identify activities and find available cost drivers. The system is to be developed in the future, especially with regard to input data once the Telecom has put systems in place to collect it more accurately and efficiently.

5.5 FACTORS INFLUENCING THE PROCESS OF ABC IMPLEMENTATION BY TELECOM

Six contingency factors were found to influence the implementation of ABC and each influenced other factors. The relationships between identified factors are represented in Figure 5-8 and Appendix D.
At the **initiation and adoption stage**, the most important factors influencing the implementation of ABC by Telecom were changes to the competitive environment and mobile technology. Moreover, the Thai Government had an indirect influence on the implementation. ABC was perceived as an effective costing technique to set appropriate organisational strategies that would respond well to competitive and technological environments. A competitive environment was shaped by changes in the Government’s policies, mobile technology and competition. The Government was, and is responsible for enacting laws concerning wire and wireless technologies, granting licenses,
controlling the standard of networks, supervising network usage and network connection (Section 5.3.1). In 1999, the commitment to WTO by the Government to liberalise the telecommunications industry by 2006, led to intense competition in the industry through the increasing number of competitors and competitive pricing strategies. Moreover, the rapid change in mobile and telecommunications technologies changed customer behaviour by increasing the demand for updated mobile products and services (Section 5.3.3). Telecom needed to invest in new mobile and telecommunications technologies in response to these changes. A competitor also cut the price in 2002 which led to the pricing war in the market (Section 5.3.2).

This situation forced Telecom to consider how to survive in a competitive environment. Telecom responded to these changes by using different strategies. As a leader in the telecommunications market, Telecom focused on differentiating itself from its competitors. It achieved this through providing the best quality of products and services, introducing innovative products and services and becoming a mobile technological leader rather than merely reducing price (Section 5.3.4). However, pricing strategy is still important to Telecom for setting a price that customers are willing to pay and to cover its costs. In achieving these strategies, ABC was selected as a costing technique which could provide accurate and comprehensive cost information in the making of business decisions, planning and control, finding non-value adding activities and eliminating unnecessary costs (Section 5.4.1).

After the decision was made to adopt ABC, Telecom started to design the costing model and implement the system. Organisational strategy, organisational structure, organisational culture and IT played important roles in both the design and implementation stage of ABC. The costing model was designed to correspond with organisational strategy as Telecom wanted to implement ABC to set and achieve its organisational strategies. Telecom implemented corporate governance and focused on CSR in accordance with the Code of Best Practices of the SET in 2000 (Section 5.3.4) as it is committed to increasing its support for its customers, its employees, the Thai community and the environment. Telecom applied the concept of corporate governance to its main strategy which is sustainable growth through the provision of high quality
services. As a result, Telecom is well-known for providing high quality network and services.

Interviewee 5-Telecom said “our level of customer satisfaction is over 90%”.

The change of organisational structure in Telecom was influenced by the competitive environment and mobile technology through its organisational strategy (Section 5.3.5). Initially, this change was not focused on the implementation of ABC but on increasing organisational capacity in an intensely competitive environment. However, this change also indirectly supported the implementation of ABC. Organisational structure of Telecom was a mix of mechanistic and organic forms. One form is represented by hierarchical control with authoritarian channels of communication, clear and functional positions with a high level of centralisation and formalisation which are characteristics of the mechanistic form of structure (Burns & Stalker, 1961). Another form has a minimal hierarchy, specialisation of functions and thrives on the power of personalities, flexible procedures and communication. This type of structure can react quickly and easily to changes in the environment and are characteristics of the organic form of structure. However, the form of organisational structure in Telecom tends towards the mechanistic rather than the organic form. The organic form is used only during times of change.

Interviewee 1-Telecom said, “If there is urgent work, relevant staff can be immediately contacted.”

Moreover, Telecom used the integrated form of organisational structure which contributed to the successful implementation of ABC. The structural integration incorporates departments for the purpose of achieving the organisation’s objectives (Lawrence & Lorsch, 1967). Telecom established an ABC team that included staff from Accounting, Marketing, Engineering, IT and other departments to brainstorm how to implement ABC. The Budgeting and Cost Analysis Department was instrumental in improving communications between Accounting and Engineering. It not only helped Telecom to respond to a competitive environment but also supported the ABC implementation.
Organisational culture of Telecom was shaped by national culture and organisational strategy. Telecom is a Thai owned company and most employees are Thai. Their attitudes are Thai which encourages both flexibility and pragmatism (Wisadavet, 1996). These are open-minded attitudes which easily accept innovative logical ideas. As a result, there was minimal conflict during the implementation of ABC by Telecom. Moreover, CSR was and is committed to increasing staff effectiveness through development programs that increase skills and enhance motivation; the Company is also family friendly. Staff have developed competencies and are motivated to work for the increasing benefit of the company and this has created an organisational culture. Telecom set the principle of work which was abbreviated to ‘FAST MOVING’. Employees had been trained to believe and work to these principles.

Interviewee 1-Telecom said: “FAST MOVING means F: Forward Looking, A: Accountability, S: Service-minded, T: Teamwork, M: Mentality, O: Openness, V: Vision Focus, I: Initiative and Improvement, N: Non-Bureaucracy, and G: Guard. Everyone has to follow this concept and thanks to the Human Resource Department for adding this concept to our blood.”

Through its strong innovative culture, it was not difficult for Telecom to succeed in the implementation of a new costing system.

The complexity of mobile technologies and network caused difficulty in identifying activities and cost drivers, as Interviewee 4-Telecom said:

“At the moment, we still have problems about collecting input data because only some equipment can perform multiple functions. It is difficult to identify the proportion of equipment usage by each service. We have to track how engineers set up the equipment. We track only the main equipment, not all equipment.”

As a consequence, Telecom focused on only the allocation of the main costs which can definitely be identified as activities or cost drivers under its conditions. Telecom tried to balance cost and benefit to reach its objectives.

With information provided, SAP, special software and Oros assisted Telecom to design and implement the ABC system (Section 5.4.3). Telecom used SAP to execute its key
business processing including financial and accounting processes. Therefore, all cost information which was available on SAP was collected in order to design the most suitable ABC costing model for Telecom. Subsequently, the costing model was implemented by using Oros as the main costing software. Cost information was transformed from SAP and special software (which was created by the IT department to collect input data for Oros) to Oros. A costing manager asserted that these types of software assisted Telecom to save time in implementing ABC, respond quickly to the demand for information and to the changes in the competitive environment, and provide accurate cost information. Telecom could not implement ABC without these types of software.

Telecom uses ABC information to achieve its organisational strategies and respond to rapid changes in the external environment as described (Section 5.4.4). Telecom uses cost information for pricing, planning, controlling costs and managing non-value added activities in order to enhance its competitive advantage.

5.6 FACTORS RELATED TO THE ABC IMPLEMENTATION SUCCESS BY TELECOM

The six contingency factors influencing the implementation of ABC also played important roles in the ABC implementation success. Shields and Young (1989) propose seven key success factors in the implementation of ABC which are generalised from Contingency Theory. The seven key factors are 1) top management support; 2) linkage of the cost management system to competitive strategies; 3) linkage of the cost management system to performance evaluation and compensation; 4) adequate internal resources; 5) training in designing, implementing and using the ABC system; 6) non-accounting ownership; and 7) consensus about and clarity of the objectives of ABC. Thus, according to Shields and Young (1989), the presence of six contingency factors would have ensured the successful implementation of ABC.
In this study, ‘the ABC implementation success’ is based on the accuracy and continued use of ABC information which is perceived by the participants (Anderson & Young, 2001).

Interviewee 1-Telecom said “We got what we expected. At the moment we still want to develop more detailed input data. If data is a bit more detailed, we will be happier as at the moment we get rough data. For example, we prepare information for the call centre quite well. It uses our information to solve problems about human resources. It found the most effective way to maximise call agent and IVR staff responses in order to reach optimisation, effectiveness and lowest possible costs.”

From this statement, the Assistant Director of the Accounting Department believes that ABC can identify specific costs and allocate these costs to discrete cost objects. Moreover, participants said they were reasonably satisfied with their ABC implementation as it provided the cost information to increase their competitive advantage; even though, the information lacked sufficient accuracy. They would like to continue developing the ABC system in response to the changes in the external environment.

To implement ABC successfully by Telecom, seven key success factors and four contingency factors - organisational strategies, organisational structure, organisational culture and IT – need to be present. Organisational strategies and IT are two success factors which link the cost management system to competitive strategies and adequate internal resources. Moreover, ABC team and external consultant were found to be important in making the ABC implementation successful by Telecom. However, all factors did not play a full role in the Telecom context and as a result, took several years to implement ABC, faced some resistance during the process, and could not implement full ABC system.

**At the initiation and adoption stage, Top management** played an important role in the successful implementation of ABC and drove other factors to that end. It had the authority to set clear objectives about the ABC implementation, motivate employees to participate in the process and provide sufficient training and resources.
Top management linked ABC to its competitive strategies; particularly the need for strategies that will deliver quality and efficiency.

At the design stage, Top Management established the ABC team to be responsible to implement ABC successfully. The ABC team members consisted of staff from the Accounting, Marketing, Engineering and IT (Section 5.4.2). Top management assigned the ABC project as a general task so the ABC team had to undertake this project in addition to their normal work. Moreover, it linked the ABC system to performance evaluation but not compensation. As a result, the ABC team played less attention on the ABC project and it took several years to complete the ABC implementation.

The ABC team was trained by top management which had an overview of the operating process and/or knowledge of ABC at the first stage of implementation. Subsequently, the team was trained by external consultants about basic design and implementation using Oros software however, few training courses were available on the implementation of ABC. The team had to learn by themselves about the design, implementation and the use of the ABC system. It can be seen that external consultants did not play an important role in implementing ABC successfully. External consultants were hired to design an alternative model to compare with the model designed by the ABC team for validation proposes only (Section 5.4.2).

For the implementation of ABC, active support from non-accounting ownership, which includes staff from every department other than Accounting, was required because in-depth data from the whole company was necessary. Staff who worked in other departments knew how to provide data to the Accounting Department; the Accounting Department did not have the ability to get all data in order to identify accurate activities and cost drivers. Due to lack of communication about the project at the initial stage of ABC implementation there was less support from employees. Top management formalised the status of the ABC team and communicated the objectives of the project to all staff and high participation resulted (Section 5.4.3). Moreover, top management also assisted the ABC team to clarify the ABC objectives to all employees and increase support for the project. Conversely, it can be seen that the consensus and
clarity of the objectives of ABC are important factors that underpin the success of ABC implementation at Telecom.

IT, organisational culture and structure made the design and implementation of ABC model successfully. Telecom had effective IT in SAP and some additional applications which provided in-depth input data for the costing system. Telecom realised that input data was important in providing accurate cost information and as a consequence, it focused exclusively on the development of IT.

Although the ABC team had double work load, they were willing to support the project Telecom had a strong organisational culture and employees believed in ‘FAST MOVING’ that enabled the Company to reach its goals (Section 5.3.6). KPIs based on ABC information was used for work assessment and encouraged employees to develop themselves and at the same time actively work for the Company. However, the power of managers in evaluating staff performance and unclear patterns of performance evaluation led to a perception of unfairness by employees (Section 5.4.4). As the nature of Thai culture is relaxed and flexible and organisational culture is strong, this issue did not become major. Employees who were not happy with this condition preferred to resign which led to high HR turnover and delayed the completion of the ABC implementation. Therefore, the link between the ABC system and performance evaluation, needs to be clear and also concerned with the performance of employees at lower levels. This would enhance the perception of performance evaluation among employees. In addition, effective organisational culture would assist the successful implementation of ABC.

Moreover, organisational structure was crucial for the ABC implementation success in the Telecom context. The misunderstandings that occurred between Accounting and Engineering led to a slow response to rapid growth in competition and technology so Top Management established a sub-department as mediator to develop a better understanding of each other’s needs (Section 5.4.3).

At the use of ABC information stage, The narrative indicates that top management uses ABC information to improve its competitive position and profits (Section 5.4.4). Interviewee 1-Telecom said that Telecom needed information for making decisions and
running business effectively. They needed information that enhances the quality of products and services and support the launch of new products in order to respond to the customer’s immediate demands.

5.7 SUMMARY

This chapter describes the history of the Telecommunications business in Thailand, the Telecom’s background, changes in contingency factors which influence changes in the costing system by Telecom and the process of ABC implementation. Moreover, what and how factors influencing the implementation of ABC by Telecom and factors related to the success of ABC implementation are identified and explained in this chapter.

In the Telecommunication industry, competitive environment, mobile technology and organisational strategy are the most influential factors influencing the decision for ABC adoption. Although the Thai Government has indirectly influenced the decision for ABC adoption, organisation strategy, organisational structure, organisational culture and IT play important roles towards the successful implementation of ABC. Since the rapid growth of a competitive environment, which was the result of the Government’s Telecommunication Liberalisation policy through its commitment to the WTO and the rapid growth of mobile technology, Telecom needed an effective costing system which could provide accurate cost information to enhance its management and operations. Telecom realised that ABC could assist the Company to increase its competitive advantages in response to the changes in the external environment. Subsequent to that in 2001, Telecom started implementing ABC and during the design and implementation stage, it set its competitive strategies to improve network and service quality and the employee competency and work attitudes. These strategies encouraged the ABC team to design an accurate costing model and seek non-value added activities in order to improve working processes. In addition, Telecom restructured the organisational structure to increase flexibility and enable a more efficient response to external change. These innovations assisted the implementation of ABC by saving time and reduce misunderstanding between Accounting and other relevant departments. Strong organisational culture which was an expression of national culture built HR strategies
and assisted Telecom to implement ABC successfully. Employees became concerned about the Company achieving its goal and conflict was resolved in an attempt to meet that end. The IT system and software were important in managing cost information to fit the ABC costing model and provide the accuracy and timeliness of cost information.

To succeed with the implementation of ABC, Top management support is the most crucial factor and it also drives other factors effectively. Top management clarified the objectives of ABC, linked the system to competitive strategies and performance evaluation, motivated non-accounting employees to participate in the project and provided adequate training and resources for implementation. However, the company’s organisational structure may have been responsible for the protracted implementation process.

It can be concluded that the external environment, especially competition and technology, is the most important factor in the decision to adopt and implement ABC. Organisational factors also play an important role in the successful implementation of ABC.
CHAPTER SIX

CASE STUDY TWO – BANK

6.1 INTRODUCTION

The previous chapter presents the findings of the Telecommunications Company and explains the influence of contingency factors on the implementation of ABC. This chapter presents the second case study and provides an explanation for the motivation and process of ABC implementation by a banking company (Bank) in Thailand. The analysis of findings described in this chapter is based on contingency theory and the model for the successful implementation of ABC as explained in Chapter 2 and 3.

The implementation of ABC by Bank was examined by collecting data on the motivation, design, implementation, use of ABC systems and the changes in the external environment. The changes included competition, Government policies, technology (related to services, IT and management), organisational strategy and structure and culture which affected changes in Bank’s costing systems. The main data collection methods, which consisted of in-depth interviews, document and archival research, were used to collect data and interpret the implementation of ABC as described in Chapter 4. The findings show that changes in competition were caused by domestic and international economic and political circumstances, Government policies and banking service technology. Organisational strategy was the most important factor that influenced Bank’s decision to implement ABC. Moreover, organisational culture and structure and IT combined with seven further success factors enabled Bank to successfully implement ABC.

This chapter begins with a brief history of the banking business in Thailand (Section 6.2) and followed with a description of Bank’s background (Section 6.3). Subsequent to this
is a description of the process of ABC implementation (Section 6.4) and evidence of the factors which influenced and determined it (Section 6.5 and 6.6).

### 6.2 A BRIEF HISTORY OF BAKING BUSINESS IN THAILAND

In the book, “Insight into Thai Financial Institution Crisis” written by Chanchai Wibunsin, 1998 describes the important role King Rama V played in the development of banks in Thailand. In 1888, King Rama V was concerned that the Thai economy was not as competitive as that of Western countries. He decided the traditional loan system, through which money was borrowed from relatives or friends for investment and trade due to the lack of financial institutions, hindered development. King Rama V opened Thailand to foreign commercial banks and the first bank to establish a branch was the Hong Kong and Shanghai Banking Corporation from England 1888. In 1894, the Carter Bank Ltd. opened in Thailand and was followed by the Banque de L’ Indochina Ltd. in 1897.

King Rama V foresaw operational problem for foreign banks in Thailand; they preferred to loan to customers of the same nationality as them and as a consequence, Thai customers had less chance to borrow. In 1906, he established the first Thai Bank, Siam Kummajol Thoon that provided money deposit and withdrawal services and international trade for rice exports. A few years later, some rich business people and Chinese traders established other commercial banks such as the Yu Seng Heng Bank (1907), the Bangkok City Bank (1909) and the Mon Ton Bank (1909) (WibunSin, 1998).

During World War II (1939), the Thai Government changed the name of the country from Siam to Thailand. Siam Kummajol Thoon Bank changed its name to the Thai Panich Bank (or the Siam Commercial Bank as it is currently known) in response to the country’s name change. Due to the effects of World War II, depositors wanted to withdraw their money from banks and this affected the operating capacity of many commercial banks in Thailand. The Thai Government realised the need for a central bank to support commercial banks and also public policies in the industrial, trading and
navigation sectors. In 1942, the Central Bank of Thailand was established, and is known as The Bank of Thailand (BOT) through the Bank of Thailand Act, BE 2485 (1942) (Johnston, 1989). After World War II, foreign banks from countries allied with Japan closed and this provided an opportunity to establish other Thai commercial banks, such as the Mon Ton Bank (in 1942), the Bangkok Commercial Bank (in 1944), the Bangkok Bank (in 1944), the Ayuthaya Bank (1945) and the Thai Farmer Bank (in 1945). Moreover, due to the lack of agricultural materials and products in many countries after World War II, the exporting rate of rice, rubber and tin from Thailand rapidly increased. Due to profits from exchange rates transactions, exporter guarantees and general bank services, Thai commercial banks expanded and many branches of foreign banks were established during this period. In 1962, the BOT enacted the Commercial Bank Act BE 2505 (1962) and with amendments in 1979, 1985 and 1992 controlled local commercial banks and branches of foreign banks. The amendments prevented the extension of sub-branches of foreign banks in the Kingdom (Mullineux et al., 2001).

In 1978, the BOT adjusted the exchange rate and abolished the par value system due to the instability of major world currencies by pegging the Baht to several major currencies. From 1989 to 1993, the financial sector was reformed in an attempt to boost domestic savings and foreign capital inflows, improve the capability of the financial sector to compete internationally, and develop Thailand into a regional financial centre (Lauridsen, 1998). The Government, the BOT and the Ministry of Finance reformed several financial regulations through the liberalisation of the interest rate and exchange rate (Doner & Unger, 1993). The liberalisation was in accordance with the globalisation of the economic and financial systems obligations under Article VIII of the Articles of Agreement of the International Monetary Fund (IMF) (Mullineux et al., 2001). As a result, low interest rate ceilings were abolished on deposits in 1990 and on lending in 1992 (Lauridsen, 1998). To enhance confidence among investors and to improve Thailand’s credit worthiness, the foreign exchange rate system was also liberalised. These initiatives widened the business scope of commercial banks and finance companies, increased competition through the universal banking concept, and enabled freedom of international capital movement (Chaiyasoot, 1995). Moreover, the Government supported the BOT to set up offshore banking institutions under the
Bangkok International Banking Facilities (BIBFs) to promote Thailand as a regional financial centre.

The BIBFs was established in 1993 to encourage the domestic competitive environment and enable Thai business to have access to lower cost international borrowing (Chaiyasoot, 1995). As a result, both the deposit and lending interest rate had rapidly increased and the Baht was depreciated against the US dollar (Mullineux et al., 2001). Suddenly, Thailand was affected by the financial and currency crisis of 1997 due to aggressive domestic credit borrowing (McKinnon & Pill, 1998). The Baht was floated by the Government and the BOT allowed commercial banks to adjust interest rates by using the reference rate which is an average of interest payable on the deposits of the five biggest banks in Thailand (Mullineux et al., 2001).

The loose supervision of commercial banks and financial companies by the BOT was perceived as a key reason for the financial crisis of 1997 (Vatikiotis & Keenan, 1999) followed by obscurity of Thai banking model (Wailerdsak, 2008). Thailand’s business model more generally closely-held family firms, with no clear separation between ownership and management, non-transparent accounting practices, and close inter-linkages between business, politicians and bureaucrats (Wailerdsak, 2008). Thai banks used to have close personal relationships and integration with their major corporate clients. In 1998, the BOT attempted to increase financial supervision and adopt international standards by tightening asset classification and provisioning rules (Vatikiotis, 1998). However, the economic slowdown, combined with strict regulations had a regressive influence on the recovery of the banking system (Mullineux et al., 2001). Subsequently, the Ministry of Finance and the BOT passed an Emergency Decree on the Secondary Mortgage Corporation BE 2540 (1997), and Asset Management Corporation BE 2541 (1998) and 2544 (2001). These decrees established institutions that were intended to resolve the Non-Performing Loans (NPL) of financial institutions such as the Asset Management Corporations (AMCs), the Thailand Asset Management Corporation (TAMC) and the Secondary Mortgage Finance Corporation (SMC).
As the experience of the Asian economic crisis of 1997, the deregulation of financial system needed effective staff, supported by adequate funding to supervise regulatory bodies to ensure the transparency and accountability of business (McKinnon & Pill, 1998). Subsequently, the Bank of Thailand Act, BE 2485 (1942) was amended in order to describe the social responsibility of the BOT and create a mechanism to guard against economic crisis. Moreover, it established the BOT’s decision-making process that was focussed on ensuring good governance and transparency throughout the organisation. Moreover, members of the public would be able to audit and increase their understanding of the BOT’s operations in the Bank of Thailand Act, BE 2551 (2008) which came into effect on 4 March 2008.

6.3 BACKGROUND OF BANK

Bank is a Thai own company which was established in Thailand on 8th June 1945 by a Thai Chinese trader who was born in Thailand. The Company’s main business is commercial banking. Business is conducted through a network of branches throughout Thailand and in other parts of the world such as China, Japan, Myanmar and the USA. Bank aims to be the strongest, the most innovative and the most proactive Thai bank. The determination to be the strongest bank focuses on financial efficiency, business franchising, and good corporate governance.

Bank focuses on seven customer segments which are multi-corporate business, large corporate business, small and medium business, micro business, signature, middle income and mass. These segments can be classified into three main businesses which are corporate, SME and retail. In response to customers’ needs, Bank has four product domains which are Operations and Transactions, Savings and Investments, Funding and Borrowing, and Protection and Information. Operations and Transactions feature products and services that meet the general financial needs of customers such as cash management, debit cards, money transfers and bill payment. Saving and Investing features products that add higher value through savings and investment such as deposits, mutual funds, provident funds and liquidity management. Funding and Borrowing fulfils the lending and capital needs of businesses and individuals such as credit cards,
home loans and SME credit. Protection and Information promotes awareness and effective prevention of risks such as treasury risk management, business analysis, and risk management products for foreign exchange, interest rate and commodity price risk.

In 2010, Bank had 805 branches and 7,471 ATMs in Thailand; total staff was 15,677 which was a 36% increase over 10 years (see Table 6-1).

### Table 6-1: Number of Bank’s employees

<table>
<thead>
<tr>
<th>Year</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employees</td>
<td>11,499</td>
<td>10,472</td>
<td>9,688</td>
<td>9,912</td>
<td>10,110</td>
<td>10,303</td>
<td>11,219</td>
<td>12,320</td>
<td>13,560</td>
<td>15,464</td>
<td>15,677</td>
</tr>
</tbody>
</table>

Sources: Bank’s annual reports from the year 2001 to 2010 prepared by the researcher

In the same year, Bank was the third-largest commercial bank in terms of corporate assets. In 2010, the Company was ranked 16th on market capitalisation by the SET. Its market capitalisation was approximately Baht 256 billion (USD 8.5 billion). With strong management and organisation, Bank is a leader in the SME business market and has received many awards from both national and international organisations. It won the Strongest Bank in Thailand Award 2010 from The Asian Banker, the Best Domestic Bank in Thailand 2010 by Asiamoney magazine, the Excellent Labour Relations and Welfare Award 2010 for a large enterprise in the labour union category for the fifth consecutive year (2006 - 2010) from the Ministry of Labour, and Gold Winner (Banking Category) of the Reader’s Digest Thailand Trusted Brand 2010. In 2010, Bank was ranked 679th on the global 2000 leading companies by Forbes Magazines (DeCarlo, 2012).

#### 6.3.1 Changes in Bank’s Competitive Environment

The economy of Thailand has recovered Since the Asian economic crisis in 1997. Most commercial bank credit extension stagnated due to the unfavorable economic climate hence the banks were struggling with a heavy NPL burden. Commercial banks focused on retail customers who had potential to deposit money and competition became intense to attract a broader base of this type of clients. In 2002, the Thai economy grew at an appreciable rate through substantial increases in both domestic consumption and
investment. Since 2006, the domestic economy continued to grow and the establishment of nine new banks approved by the Minister of Finance had increased the demand for investment from both the public and private sectors. Competition over products such as housing loans, credit cards, deposits and the mutual fund business was intense. Price competition in fund investment also heightened, as management fees were slashed to attract investors.

During 2007 to 2008, the Thai economy experienced a slowdown. This was caused by weaker domestic spending, a drop in income from tourism and decreased demand for customer and business loans due to domestic political uncertainty, unrest in the three southern border provinces, rising oil prices and the stronger Baht. The effect of slower economic growth led to intensified competition between commercial banks for market share. Domestic interest rates reached their lowest point and commercial banks raised fixed-term deposit interest rates. This trend continued into the final quarter of 2007, having the effect of deepening the competition for deposits between banks.

Competition in the banking business remained intense during 2009. Bank loans faced tougher competition from capital market securities, particularly private debentures, as issuance size hit a record high coupled with strong competition between commercial banks. As pricing competition for deposits intensified, commercial banks designed new products with special interest rates to retain their customer base. Other savings and investment alternatives that provided higher returns than fixed-term deposits increased competition.

6.3.2 Government Influence on Bank

As described in Section 6.2, the Thai Government, Ministry of Finance and the BOT play an important role in changes in banking competition by controlling the domestic economy and enacting laws to protect consumer rights.

After the Asian Financial Crisis in 1997, the economy was invigorated by the Government’s fiscal and economic policies to invest public funds at community level to stimulate localised economic growth. These policies increased the spending power of the people and contributed towards continued economic recovery. On June 8, 2001, the
Government passed the Thailand Asset Management Corporation Emergency Decree BE 2544 (2001) and established the TAMC in an attempt to resolve the NPL problem of commercial banks. This state-run agency accepts impaired assets from both public and private commercial banks and AMC companies for management. To meet the criteria, Bank has transferred non-performing assets to TAMC since year-end 2001, which has helped reduce part of its troubled loan portfolio.

On November 12, 2002, the BOT issued a directive regarding credit card businesses, effective from January 12, 2003. This directive tightens the minimum income requirement and states that interest, penalties, fees, and other service charges on unpaid debts collected by commercial banks shall not exceed 18.00 percent per annum of the aggregate amount. In addition, fees and costs on the aggregate amount shall not exceed 3.00 percent per annum of the amount of cash withdrawn through the credit card. The impact of these three directives on the Company’s current interest income is likely to be minimal. However, to have fee collection records meet BOT’s requirements, the Bank had to improve its debt processing system, thus raising operational costs. The Government helped to boost housing loans through an extension of the title transfer fee-reduction and tax-exemption from 2002 to 2003.

Moreover, the Government uses the power of laws through the BOT to control the operations of commercial banks to ensure the stability of the domestic economy. On January 6, 2004, the Cabinet approved in principle, the Financial Sector Master Plan as proposed by the Ministry of Finance and the BOT. The new plan deals with structures for Thai and foreign financial institutions; financial institutions that meet BOT criteria may be upgraded to full commercial banks status. Consumer protection mechanisms to ensure fairness to all customers are also included. In the area of credit risk, risk management policies and guidelines have been established to enable Bank to comply with the BOT’s Consolidated Supervision framework as well as other relevant laws and international standards. The management teams also receive an overall operational risk profile as essential information for their decision-making.

In 2007, Thai commercial banking performance indicated lower total net profit than in 2006 due to the need to meet the prerequisites of the new the International Accounting
Standards (IAS) 39, as required by the BOT. The Federation of Accounting Profession (FAP) is the national professional accounting body in Thailand and responsible for setting accounting and auditing standards known as the Thai Accounting Standards (TAS). All companies that operate in Thailand have to prepare their financial reports based on TAS. The FAP implements IAS and International Financial Reporting Standards (IFRS) for companies listed on the SET. The Company established the IFRS Conversion project, in order to manage changes in relevant standards.

6.3.3 Changes in Bank’s Organisational Strategy

Commercial banks in Thailand faced significant operational and financial challenges after the economic crisis in 1997. Bank had to restructure many work processes in order to deal with the unprecedented changes in the local banking business. In 1999, Bank defined a new vision and mission, while restructuring the organisation and reshaping its business strategies to facilitate the attainment of goals. In 2000, the Company developed eight strategic programs to restructure operations for improved efficiency and flexibility required for a modern banking business. These strategic programs were implemented in 2001.

The eight strategic programs were developed based on the Balance Scorecard concept to develop all business units such as customer relations, management systems, operating systems, HR and IT as follows:

Program 1: CRM Development Program

This program includes the development of marketing processes specific to sales and service delivery through the customer relationship management system. Its objective is to facilitate closer ties between customers and the Company. Key focuses include establishing marketing and sales strategies targeted at specific segments, the development of qualitative and quantitative customer relationship standards, and the creation of an organisational culture to facilitate better sales and service. To maximise effectiveness and efficiency and better respond to customers’ needs, more diverse services will be offered, data base accuracy will be ensured and training for employees will be continuous.
Program 2: Credit Transformation (CT) Program

The objectives of this process are to create a new credit culture that includes developing sound underwriting standards and efficient and effective risk management. The Company is developing tools and systems to maintain credit quality, minimise credit risk, while promoting effective new business. Credit management is being transformed through streamlined work processes, new tools to facilitate credit approval and new units to monitor credit portfolios. The Company is also developing support systems for loan origination and collection and recovery to further enhance efficiency in credit processes.

Program 3: Fee-based Business Development (FBD) Program

The main objective of this program is to increase the Company’s fee income generation potential and to increase market share through the Trade Finance Project (TF) and the Electronic Delivery System and Cash Management Project (EDCM). For TF operations, the Company will separate customer relationship management from operational units relocate it to Centralised Processing Centres; the core units that will handle all business operations. Sales force staff will therefore be able to focus primarily on marketing and customer service. In the EDCM Project, the Bank has developed an online electronic banking system, operating 24-hours daily, that consists of cash management, trade finance and foreign exchange services.

Program 4: E-Approach Development (EAD) Project

This is an important step in preparing the Company for efficient use of Internet technology, starting with improvements in the Company’s web-site to achieve higher public recognition. In addition, the security system guarding the Company transactions has been improved to increase the confidence of customers. Focus has been placed on swift implementation and broad categories of information to better respond to the needs of all customers, shareholders and the general public.

Program 5: Centralised Back Office (CBO) Reconfiguration Program
All operational units are placed under the supervision of the Central Operations Department in order to improve efficiency and enable the branches to focus primarily on sales and customer service. The Company is in the process of creating work processes compatible with centralised operations. Training courses are in place to increase employee’s skills in sales and service. In 2002, the Bank completed the centralisation of back office operations for all branches in Greater Bangkok.

Program 6: IT Infrastructure Development (ITD) Program

The Company places emphasis on the continuing development and transformation of its IT infrastructure, by creating an efficient, flexible and secure database through changes in its core computer platform to facilitate changing market demand and address new service requirements.

Program 7: Value-Based Management (VBM) Program

This is a strategic concept designed to foster the alignment of every unit and employee to the Company’s goals. The Balanced Scorecard concept has been adopted as a management tool to provide a framework for strategy using several linked perspectives. A Profitability Analysis (PA) system has also been developed for use in reviewing business groups, departments, products and customers. Currently, the rollout of the Company’s vision and strategies under the Balanced Scorecard concept to every operational level is underway. A new computerised system has been implemented to track results and ensure the alignment of individual actions to Company’s goals.

Program 8: Human Resources Management Development (HRMD) Program

The Company has targeted the development of effective HR management that is comparable to international standards. Through various programs, the Company will be able to attract and retain high-caliber staff, and provide them with better opportunities to fully utilise their potential. The Company will implement a system for performance evaluation and compensation (Performance-Based Compensation), together with a database for effective management and deployment of key personnel.
Besides these eight strategic programs, Bank uses several marketing strategies such as product differentiation and competitive pricing to retain existing customers, and focus to seek new customers. For example, Bank continues to introduce new products and services which are designed to better fit customer needs, maintain its high profile brand image and lead the way in creating an enduring and favorable impression. The Company continues expending and developing channels for sophisticated financial services through opening new branches throughout the country and installing ATMs. In 2010, the Company had 805 branches in Thailand and 7,471 ATMs. The Company also expands its business to other countries. The bank collaborated with China Minsheng Banking Corporation to implement a co-lending project to SMEs in China.

Furthermore, Bank offers financial advisory and consulting services. These services benefit and contribute to the success of both SMEs and individual customers as well as to the Company because through these initiatives it has become a market leader in this market. Bank has developed existing products with varying interest rates to promote growth in housing loans.

The approval of the establishment of the ASEAN Economic Community (AEC) by 2015 to create a single regional market and production base will facilitate the mobility of products, services, investments, capital funds and skilled labors. The Company has established clear operational and strategic plans to prepare for more business opportunities.

**Management and Control techniques**

Since Bank incorporated a new Balanced Scorecard system of performance management to drive Bank’s strategic programs in 1999, it has implemented several management techniques in order to push the plan’s success.

In 2001, Bank developed flexible modern risk management tools through technologies obtained from a leading foreign risk management advisory company which assists the bank to identify risks and set prices. Moreover, Bank has enhanced its organisational culture and professional Code of Conduct in accordance with the provisions relating to securities business, under the Securities and Exchange Commission (SEC). Subsequent
to that, a PA system was developed for reviewing business groups, departments, products and customers in 2002. The VBM system, which uses the principle of Risk-Adjusted Return on Capital (RAROC) and Economic Profit, was applied to the Corporate Business Group and the Retail Business Group to increase the efficiency of capital adequacy management in 2004.

Since 2005, Bank has focused on the improvement of accounting systems by developing a new chart of accounts for the Company and a single bank-wide General Ledger System that has been integrated with other core systems. By the end of 2006, ABC was implemented following the new chart of accounts in order to control costs and manage business activities. The Company continued implementing a new Financial Information System covering basic features that included financial management, reporting and budgeting which were completed in 2008. In 2009, the Company initiated the Process Reengineering project with the aim of enhancing operational and cost efficiency and to increase competitiveness through operational procedure development under the Lean and Six Sigma concepts. As the result of implementing new management techniques, Bank has benefited from process and efficiency improvements as well as improved cost control and budgetary management. The Company has also concentrated on its core business, and has not been distracted by non-core activities.

6.3.4 Changes in Services and Information Technology

IT is playing a key role for Bank in achieving its success, especially in the highly competitive environment that includes global players with increased capabilities in this technology. As a result, the development of technology, IT and banking technology, are included in Bank’s strategic programs. The Company believes that professional improvement of IT would benefit the greater efficiency of business operations, improve cost control and budgetary management. Bank has therefore outsourced its IT operations to IBM for 10 years in the areas of Application Management, Network and Workstation Management and Data Centre.

Over the last 10 years, Bank has developed existing ITs and installed new ITs to meet its business needs. These have enhanced its competitiveness, as well as facilitating development of new and more complex products. In 2001, the Company invested in
current IT systems for several of its businesses and implemented more systematic IT safeguards. This enables new products and services such as E-banking, E-web shopping card and M-commerce.

In 2003, Bank developed the Electronic Data Capture (EDC) network which connects with the computer networks of large-scale stores and their branches. This helps the Company reduce the interchange fee. The Company implemented the Document Management System (DMS) to reduce the Legal Department’s workload and implemented the Document and Collateral Control System (DCS), which gathers credit approval documents, main contracts, subcontracts and collateral documents; records them in the form of an image file.

In 2004, increased use of high-technology systems, such as the Electronic Invoice Presentation and Payment (EIPP) system, Online Direct Debit system, and E-Dividend, were developed to facilitate customers’ transactions. Operational systems have been continually improved and are now electronically-based to enhance the efficiency of operations.

In 2005, Company implemented Imaging Workflow technology which has helped facilitate fund transfer transactions. It improved a secure IT infrastructure for innovative products and services, and the introduction of an improved design in the security infrastructure of the Company’s subsidiaries. The Company has continued to improve the efficiency of its IT system under the Transformation Plan, and an IT Master Plan has been drafted to pave the way for improved the Company’s IT systems in the future.

In 2006, the Company upgraded the ‘Centralised User Management System’ to automatic access control and monitoring of higher levels of information security. This system also features Privileged ID Management to oversee special authorisations beyond the usual access rights afforded to general employees.

In 2007, Bank implemented Oracle costing software to improve cost and activity management. In 2008, the Company developed the Financial Information System (FIS), focusing on development of a financial management system, reporting and new accounting system to upgrade the central automated management and financial
information services. Moreover, the Company installed Channel Enhancement and Extension (CEE) to enhance capabilities in sales and services and IT-Capital (ITC) projects to respond to diverse business needs, increase competitive potential and ensure development of complex new products. Since then, the Company has been developing IT to maintain its position as a leader in electronically-based operating systems.

6.3.5 Changes in Bank’s Organisational Structure

In 2001, Bank’s organisational structure consisted of two management divisions and six operational divisions. The two management divisions were the Corporate Secretarial Division and Compliance and Audit Division. The six operational divisions were Corporate Business, Retail Business, Credit Management, Systems, Finance and control and HR Division. In 2002, Bank improved its organisational structure to enhance efficient management through the centralised back office project. This project aimed to improve efficiency and allow branches to focus primarily on sales and customer service. All operational units were placed under the supervision of the Central Operations Department. The Centralised back office operations benefited the Company through 38% site staff reductions and cost saving while service levels became more efficient and standardised. Figure 6-1 shows the organisational structure of Bank in 2001 and 2010.

In 2005 due to the growth of the Thai economy, there was high demand for investment from both the public and private sectors. Since 2003, Bank’s strategy focused on new customers, especially SME customers. In response to the economic situation and the growth of SME customers, Bank established two new divisions which were the SME business and Capital Market Business Division.

In 2007, Bank established a new division which was the Corporate Strategy Management Division to ensure corporate strategy was recognised by employees at all levels. The Corporate Strategy Management Division is a management division consisting of three departments which are, Corporate Strategy, Communication and Administration, and Oversea Office Management and Correspondent Relation. These three departments had been under the Corporate Secretarial Division.
Due to unfavorable economic conditions and intense banking business competition throughout 2009, Bank focused on restructuring operational procedures and systems. One part of the operational restructure was the establishment of a new division; the Corporate and SME Products Division. This division is separate from the Corporate Business Division for managing and developing all products related to Corporate and SME customers. In 2010, it established the China Business Division in response to the expansion of its business in China and changed the name of Credit Management Division to Enterprise Risk Management (ERM). For the last 10 years of banking operation, Bank has three management divisions and ten operational divisions.

**Figure 6-1: Bank’s organisational structure in 2001 and 2010**

Sources: Bank Annual Reports; years 2001 to 2010 prepared by the researcher.
6.3.6 Bank’s Organisational Culture Building

Bank recognises that employees are its most valuable resource therefore it places importance on their security and welfare. The Company has adopted a HR policy to enhance opportunity and potential for all staff to achieve professional excellence. The policy has been designed to be consistent with business requirements and strategies based on customer-centricity. This should help Bank become a stable and innovative financial institution, as well as being able to respond to the needs of our customers more effectively. It will be achieved through employing high quality personnel, enhancing employees’ competency and leadership, and organizing organisational culture with an emphasis on teamwork and customer-centricity. The following paragraphs describe Bank’s employee development, employee remuneration and employee relations and recruitment.

Employee development

In the last 10 years, Bank has attempted to develop its employees by implementing several personnel management strategies, training to develop employees’ knowledge and skill and installing HR information technology.

Personnel Management approach

In 2002, Bank promoted a performance-based corporate culture by implementing the PRO project which is a performance-based management system. In the Company’s Annual Report 2002, p. 34 states that

“P stands for the Performance of each employee which is directly tied to the success of the Bank; R for the Reward and recognition for each employee which includes not only salary and benefits, but also training, development; and O for the Opportunity for each employee to advance and prosper in his or her career path.”

There are four steps in the performance-based management process:

(1) Performance based Planning: employees set their goals which are aligned with the Bank’s business goals, must be mutually agreed upon between employees and their assessors, and must be done within a set period.

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(2) Coaching and Feedback: assessors and employees formally and informally discuss the progress of work, results and effectiveness of work, including what is going well and what could be improved throughout the year.

(3) Performance based Review: employees and assessors review and discuss results versus expectations on an ongoing basis and formally at the end of the year. Employees can assess their performance, potential, stage of development and career progression, and to further revision of their career planning.

(4) Opportunities and Rewards: the results of performance-based reviews are used to identify development needs, determine readiness for career advancement, rewards and fair and market-competitive compensation.

In 2004, the Company has conducted a Competency Gap Analysis to provide information for personal management in the future and develop common goals for related departments.

Training Programs

Bank has developed its employees’ competency and working skills through several study courses both in operational and management area, in according with business strategies. The Company provides training courses to increase professional standards for personnel in sales, service, credit underwriting, risk management, leadership, management and administration. For example, in 2007 the Company upgraded personnel skills and capabilities in product management to provide better advisory services and customer satisfaction through the Business Clinique program. Moreover, Bank has focused on the development of leadership through special programs to enhance managerial staff efficiency in supervisory tasks, as well as to improve the quality of teamwork management and organisational development. Bank also has assisted staff to obtain marketing licenses to sell financial instruments/units.

IT for personnel development

Since 2006, the Company has upgraded and developed the Human Resource Information System (HRIS) to enable ‘Employee Self-Service’. This system reduces the
steps and time required to perform certain HR-related functions, thereby improving overall working efficiency. The e-Expense project allows employees to reimburse health care and their children’s educational enrolment fees and monitor reimbursement results, which has reduced the number of follow-up phone calls by over 90%. This has also reduced telephone expenses and the Company is prepared to extend this project to other welfare systems provided to staff, such as borrowing.

Moreover, in 2007, the Company started e-Learning programs which include 100 training courses via electronic channels. Employees can select to study any courses that enhance the skills necessary for their jobs, or other training courses as desired. In 2009, the Company introduced new channels to communicate with employees, particularly concerning initiatives affecting the quality of life and work efficiency. The “Coaching Clinic for Salespersons” programs were produced for Bank’s TV channel to boost competitiveness of branch staff nationwide.

**Employee Remuneration**

**Staff Retirement Fund**

Staff members are entitled to retirement pay upon termination of employment depending upon the length of service and other conditions. It is Company policy to contribute an appropriate amount to the Fund for each period.

**Provident Fund**

Bank established a provident fund under the Provident Fund Act BE 2530 (1987) and registered the Fund with the Ministry of Finance on August 16, 1994. According to the Fund’s regulations, every employee is entitled to apply for membership, employees contribute to the Fund at the rate of 3% of basic salary and the Company contributes to the Fund at the rate of 3.0 - 4.5% upon termination of employment. The employees are entitled to benefits upon termination of employment except when terminated “without compensation”.

**Rewards**
The Recognition Program has been implemented through cooperation between heads of business groups and departments to create an incentive for effective performance. It establishes a performance model for employees and encourages staff to perform consistently with the Bank’s expectation. The Bank has carried out a comparison of compensation and benefit structures with others in the market to help retain current staff and attract new employees. In 2009, the Company improved its “Sales Rewarding and Incentive System” to achieve better performance results, especially in frontline sales, with accurate income targets in order to promote better quality and higher quantity of sales.

**Other Remuneration**

Employees have the right to collect the warrants for ordinary shares of the Company as the Extraordinary Meeting of Shareholders determined on August 11, 1999. The Company recognises the welfare and security of its employees, especially through the provision of scholarships for employees and their children, fire drills, fire prevention systems, and annual medical check-up programs.

Moreover, in 2005 Bank increased its employees’ cost-of-living allowance by another Baht 1,000 as a matter of concern for their welfare under the current economic conditions. In 2007, the Company conducted surveys on several types of remuneration schemes to develop its remuneration structure in line with the current market situation. This was necessary in order to attract capable staff to work with the Bank and as well, retain competent personnel.

**Employee Relations**

Bank’s pursuit of ongoing strategic policies regarding the management of HR, HR development and employee relations has resulted in the Bank being honoured with the award of “Outstanding Establishment in the Year of 2006 for Achievement in Labour Relations and Welfare”, presented by the Thai Ministry of Labour. The Company is the only commercial bank classified as a large corporate entity in Thailand to have received this award for two consecutive years. Since then, the Company has received this award up until 2010.
Furthermore, the Bank implemented additional labour relations activities, especially in special events and celebrations, labour-related orientation courses and advisory services on issues specific to the Company and for support service providers.

In addition, during the 2009 annual negotiations between the Company and labour unions, a satisfactory conclusion was reached in accordance with the stipulations of the Labour Relations Act BE 2518 (1975).

**Performance Evaluation**

To retain staff with potential, Bank revised its People Management Goals to enable senior and middle level executives to set Individual Goals. Furthermore, a 360-degree feedback management tool was employed for systematic evaluation of executive behaviour.

The Company conducted an employee survey in 2008, to identify factors that affect working efficiency and quality of life and the results showed high satisfaction (Pull Index) among participants.

**Recruitment**

Bank has focused on recruiting high potential staff whose competency fit its requirements with regard to business expansion. In 2006, Bank introduced “A Career of Excellence” policy through media channels and implemented the E-Recruitment System to further facilitate development of the candidate database. This system helps enhance efficiency in identifying proficient staff to join the Company, and enabling job seekers to apply for positions in a convenient way. In 2007, the Company revised recruitment strategies and made it more efficient and thereby attracted more qualified candidates:

The Company has held one day recruitment fairs during which staff would be hired. The fairs focus on acquiring personnel required to support the Company’s strategic position, personnel for strategic jobs and limited-supply positions.
• The Company held a program for students who have displayed excellent character and diligence in their studies. These students are perceived as future employees of the Company.

• The Company set up a special recruitment unit to expedite candidate selection at provincial level. Testing and selection of applicants at regional urban centres increase recruitment opportunities for these areas. Testing has been made more relevant to the job requirements of specific positions thereby better reflecting the abilities of applicants.

• The Company participated in the Career Exhibition 2007 event, wherein it received responses from 7,100 applicants which exceeded its expectation of 5,000 applications.

In 2008, Bank continued to adjust its strategies and procedures to recruit high-potential staff to meet the demand of business units.

• In the Career Exhibition 2008, the Company received a total of 8,500 candidates applying for employment which was higher than the total of 7,100 candidates recorded in the previous year.

• The Company began the K-Internship Program by accepting applications from Master’s degree-candidates with a good performance history as Assistant Relationship Managers (ARMs) under Relationship Managers. They are employed as interns at business centres which have experienced a shortage of qualified applicants.

• The Company also mapped out a long-term plan for recruitment and selection of high-potential staff by granting awards to high performing students at targeted universities. The objective of this strategy was to encourage these students to work with the Company after graduation.
6.3.7 Accounting and Costing System of Bank

Prior to 2000, Bank had recorded all business transactions in order to prepare the financial reports in accordance with the national accounting and auditing standards. The main costs of Bank are labour costs which were classified as a service overhead and grouped into Fixed and Variable. Prior to the implementation of ABC, Bank used traditional costing systems for cost allocation based mainly on the volume of customers.

In the area of management accounting, Bank did not have any specific techniques to prepare specified information for business decision-making. After the economic crisis in 1997, Bank implemented ABC with the aim of having more accurate information for better business decision-making. However, the implementation of ABC was not completed because Bank focused on implementing other management techniques and new service technologies and IT systems. Subsequently, Bank implemented ABC during the latter part of 2006 and early 2007 with the implementation completed by 2009.

As the business of Bank is banking, its main income is from interest and dividends. Bank earns this income from four main activities which are loans to customers (including loans, overdrafts and bills), interbank and money market items (including deposits, loans and security purchased under resale agreement), finance leases and investment (including investment in Government and State Enterprise Securities, Private Enterprise Debt Instruments, Foreign Debt Instrument and Equity Securities). Moreover, Bank earns other income from fees and services, exchanges and net premium writing.

The costs of the Company consist of products and services and marketing and administration. Cost of products and services includes interest for deposits, interbank and money market items, short and long-term borrowing and fees and services. Marketing costs include advertising and promotional activities. Administration cost include personnel expenses, offices and equipment, tax and duties, directors’ remuneration, contribution to the deposit protection agency, underwriting, utilities and miscellaneous expenses. Bank expects to manage and control all operating costs.
As Interviewee 1-Bank explained “Credit and deposits are our core products. We also provide insurance to customers. ..... Our main incomes are interest income and fee income. Interest income is received from credit customers and fee income is received from general customers who use the Bank’s services (Internet banking, transferring money, exchanging money, for example). .... Our expenses are administrative expenses such as staff salary, IT, rent, transportation, electricity and water. We are different from a manufacturing business which has cost of goods sold, but we don’t have any. We sell services and besides administrative expenses, we have interest expense which is money we pay to customers when they deposit their money with us. Then, we provide their money to credit customers in order to earn interest income. We earn the difference between interest incomes over interest expenses. Personnel expense is quite high but not higher than interest expense.”

6.4 THE PROCESS OF ABC IMPLEMENTATION BY BANK

6.4.1 BANK – Stage 1: Initiation and Adoption

Bank had implemented ABC for two times, the first version was implemented in 2000 and the second version was implemented in 2007. This study mainly describes the second version of the ABC implementation process.

The first version of ABC implementation by Bank in 2000

Since the economic crisis in 1997, Bank’s expenses were higher than its competitors therefore, managing costs became essential. However, the Company lacked cost management information and its traditional costing method did not separate costs in detail. The Company did not use any costing techniques to allocate costs and calculate total costs. Cost information was also prepared for financial reporting purposes. Therefore, costs of supporting departments, such as Financial Planning and HR, were not allocated precisely to cost objects. The Company decided it was essential to find a suitable method to enable it to calculate accurate costs.

As a service business, the information about the cost of each activity is important for improving operations. In 2000, Bank hired Price Water House Cooper, which is a
multinational consulting and auditing company in Thailand, implement the ABC system for the Company. Price water House Cooper designed the costing model by using the model from other banks as a trial project. It helped the Company identify the general activities of the bank and identify value and non-value added activities.

As stated in Interviewee 1-Bank said “It is difficult for us to identify these activities without the help of a system such as ABC”.

The Company’s general business includes market research, sales, processing customers’ requirements, servicing customers, accelerating debt collection, and analysing information and reporting. Consultants formed a pilot group which included staff selected by the management of each department. Some staff from high expense units were also selected for the pilot group. These departments are in charge of products and branches, such as the branch network department, which is responsible for the operations and support of all branches. All expenses incurred by branches are the responsibility of this department, such as water and electricity, staff salaries and other related expenses. This department reviews the business of branches and is described as a ‘retail group’ as it takes care of retail customers. The corporate group manages corporate customers and includes three sub-groups of customers: large, medium and SME. Both these groups have staff salaries and marketing expenses. Moreover, the system group, financial group, HR group, and compliance and audit group were selected to participate in this project.

Consultants interviewed the groups about their working systems and their responsibilities and used the information to set standard activities and standard processes. They drew value chain processes by linking standard activities and processes. The flow of the working process included around 20 key processes which contained many sub-activities. Each activity is linked as a process which is described by Interviewee 1-Bank as “the value chain”.

Due to the volume of information, Bank needed an IT system to enable ABC to calculate costs. The Company used an in-house system which was written by its IT staff for cost allocation. IT staff linked the expense system to the cost system. This link
would distribute expenses to related activities automatically based on cost drivers which
had been previously set.

Once the consulting company completed the implementation, Bank focused on
increasing its competitive potential and income by implementing several management
and operational techniques. Between 2001 and 2006, Bank installed modern IT systems
and implemented various management techniques such as the balance scorecard, risk
management, PA system, value-based management and the development of a new chart
of accounts (see Figure 6-2). As a consequence, less staff paid attention to using the
output of the ABC system. The output of the system was used only for preparing cost
reports, not for management. It did not identify non-value added activities and did not
control any costs.

**Figure 6-2: Timeline of the implementation of ABC by Bank**

![Timeline of the implementation of ABC by Bank](image)

Source: Bank’s interviews prepared by researcher

**The second version of ABC implementation in 2007**

In 2007, Bank’s policy provided a direction for cost saving for all staff to follow.
Therefore, cost information became important for managing and controlling costs.
However, the Company found that the cost information from the ABC system version
2000 was not sufficiently precise due to usage limitations. Firstly, most functions were
manual and it took time to prepare input data which resulted in incomplete input data.
Secondly, the Company lacked ABC proficient staff due to high staff turnover.
Furthermore, the IT system changed in 2001; the previous ABC system did not fit the
new IT system. For that reason, Bank wanted to renew the ABC system in order to
improve its working efficiency by using accurate cost information. Moreover, a team
was established as a new unit responsible for the implementation of ABC. Some
members of the ABC team were new employees, who were specifically hired to work on the implementation of ABC; while, others were current Bank employees who were redeployed to the ABC team.

Due to a large amount of business transactions and the competitive environment, Bank preferred to use costing software which would provide accurate and in-time information. After presentations from several software companies, Bank advertised for bid submissions.

Bank established the committee, which included a management director, a manager of the finance and control division, the head of the ABC team and the IT manager, to select the most suitable costing software. The committee scored each company from several perspectives such as the response of the software to business needs, the security of the software which was compatible with the Company’s system and infrastructure, the reputation of each software company and the operation of the software. Moreover, each perspective was weighted based on the Company’s needs after which the software company that scored highest was selected.

In 2007, Bank decided to buy ‘Oracle’ costing software to replace the old ABC system. This was because Bank had used Oracle for calculating Cost of Capital. If the Company used Oracle for ABC, it could use the same database as Cost of Capital. Moreover, the Company realised that the allocation method of Oracle was flexible in terms of cooperation with other tools and applications and the software Oracle was used by national and international banks. Bank believed that Oracle was popular and reliable software and if there were problems, they would be easy to solve.

6.4.2 BANK – Stage 2: Design

After installing Oracle, Bank needed to transmit cost drivers and input information from the old system into the new system. Then, the Company reviewed the costing model which includes cost drivers and input information and changed some of them if it was necessary. The costing model from the first implementation was out of date because of changes to the banking industry, changes to the Company operations or changes in
products. The costing model was changed based on the Company's business strategies, organisational structure and its current situation.

The Company established an ABC unit to be responsible for the implementation. Top management moved staff from Accounting, Finance, Business Unit and IT departments to a new ABC unit and recruit new staff for this unit in order to achieve the implementation. After the ABC team began to refine the costing model it sent the costing reports to each department for reviewing. Each department identified whether it was a cost receiver or cost sender after which costs were allocated based on activities and cost drivers. The departments which had received higher costs than others complained and questioned activities and cost drivers as these would affect performance of all working units.

Interviewee 1-Bank illustrated “branches had lots of expenses and activities which related to sales and customer service such as depositing and withdrawing money. When sellers at branches sold products, they would count how long they spent on selling each product. Costs which were incurred by selling activities would be allocated to each seller based on selling hours. If a seller took too much time to sell products, he or she would have higher costs than other sellers. It would affect the sellers’ performance”.

To solve this problem, the ABC team formed a working group to decide whether activities and cost drivers were suitable and reasonable. The ABC team followed the consensus of the working group; if staff had any questions they could raise them with the working group. The working group included staff who used resources and staff who were responsible for cost objects (products and services) to refine the costing model. Initially, staff did not want to participate because they thought it did not relate to their work and they were not knowledgeable about ABC. Thus, directors of each department were assigned to discuss ABC with staff after which representatives were selected to join the working group.

In Interviewee 2-Bank said “Our director discussed the project with directors from other departments. Then, directors of each department communicated with their staff. After that, everyone knew that we had to work together. We work as a team. Top management also made an effort to ensure the successful implementation of ABC”.
Moreover, the directors of each business group (mainly corporate, retail and finance) were members of the working group. They assisted the ABC team to make decisions when the working group couldn’t reach a consensus due to lack of clarity.

Then, the ABC team trained relevant staff from each department for a year. The team trained each department during the working day and not in personal time. Some departments, which performed similar activities, were trained at the same time. Each training session took around three hours. After training, the team gave revision exercises about cost identification, activities and cost drivers and checked this work during the next meeting.

The team cross-checked and verified the costing models of each department and whether they met the ABC structure. In some cases, some departments requested changes to their cost drivers. The ABC team considered changes and if they were sufficiently significant; if they were not significant, the team reviewed them at the end of the year. Significance equates with the amount of money and time spent. Once completed, the IT department tested each cost driver by running data on the system to verify the cost sender. Then, the ABC team sent the cost driver information from a cost sender to a cost receiver for confirmation.

**Cost Allocation Flow**

The team applied the costing model from the ABC system version 2000. The ABC team and the working group reviewed and identified all processes, costs, activities, cost drivers and cost objects as shown in Figure 6-3.

Bank’s business is classified into two processes which are core and sustainable processes. The core processes are the main business activities consisting of research, development, marketing, sales, transactions, servicing, debt acceleration and customers monitoring. The first two processes are about developing, marketing and selling products. The third process, the process of transactions, includes opening new bank accounts and evaluating the rate at which customers deposit or withdraw money. The process of servicing and monitoring customers is performed by the after-sales service
group that manages customer relationships. The fourth process, the process of debt acceleration, is about accelerating all payments which are overdue.

**Figure 6-3: An example of the cost allocation flow of Bank**

Sources: Interviews of Bank prepared by the researcher

Sustainable processes maintain all activities which do not relate to the core activities of the Company. This group supports core activities such as management, HR, IT service, law, performance analysis and risk management. All of these processes are described in staff interviews which were conducted by the consultants.

The costs of sustainable processes are assigned to each core process based on a percentage of the cost consumed which is calculated on the proportion of time it takes staff to perform each activity of each process. The proportion of time staff perform each activity is calculated from the number of days staff spends on each activity which is
counted by the supervisor. Interviewee 2-Bank gave an example of how to allocate cost of an operating unit which is responsible for approving credit requirements,

“A sale person sends credit requirement to the operating staff that is responsible for authorizing credit applications. Then, the operating staffs analyse whether to approve the request or not. If the request is approved, it will be sent for loan processing to check the customer’s credit background. The credit approval unit has to assign its costs to the cost object. Its activity is to approve credit and cost objects are credit products. They will count how many credit requirements they have to work on and how much time they spend on each requirement. Moreover, the number of days they spend on each activity is counted by a supervisor. They may spend 80% of their work on approving credit and 20% on another activity. For approving credit, 80% of total cost is assigned based on the total of all type of credit requests or the total of transactions. Operating staff have to count what they do each day”.

In Figure 6-3 shows examples of activities, sub-activities and cost drivers which are related to research, development and marketing and a process of transaction. The process of research, development and marketing contains three activities which are marketing, promotion and development. The promotional activity consists of three sub-activities which are the design, monitoring and launch of promotions. Costs of these activities are allocated to cost objects based on the volume of a new accounts. This is the amount of money deposited by a customer who opens a new account with the Company.

Main activities of the transaction process are transaction services to customers at the branches and evaluation of deposit and withdraw transactions. Sub-activities of transaction service activity are deposits, withdrawals, credit and ATM. Expenses which relate to staff at the counter who provide services to customers, water, electricity and IT are allocated to each sub-activity based on a percentage of cost consumption. A percentage of cost consumption is calculated from the proportion of times that staff performs each activity. Costs of deposit and withdrawal activities are allocated to cost objects based on the number of transactions which occurred when customers deposit or withdraw money.
Credit activity occurs when staff provides credit to a customer. Staff checks the customer’s credit rating before providing money which is the main expense of this activity. The number of credit requirements is used as a cost driver for this activity.

Another activity is ATM transactions. Expenses related to this activity are the depreciation of the ATM machine and the rent. The number of transactions which have been performed through an ATM is a cost driver and used to allocate costs to each product. Most cost drivers are transaction based. Some of them are the account number which has been used for the approval for credit.

Moreover, if some units’ main activity is to work with customers, the cost driver for these units is the total customers who receive services or the total of accounts as a cost driver. Costs related to credit cards also use volume of spending as a cost driver because the Company gives customers points for spending to encourage more activity.

All cost drivers are reviewed every year. Interviewee 4-Bank said in 2010, that top management required a meeting with branches and product managers to discuss cost drivers. They reached a consensus about the number of cost drivers for deposits and selling insurance. The cost driver per deposit was two minutes and the cost driver per insurance was one hour. At the same time, they designed a total of 140 activities that would be performed by the branches.

6.4.3 BANK – Stage 3: Implementation

At the beginning of the ABC implementation, the Company restructured the chart of accounts for the year by using the services of Deloitte. The previous chart of accounts was not accurate enough and therefore did not represent the current financial standing of the Bank. For example, in the previous chart of accounts, all types of loans were grouped in the ‘Loan in Baht’ account. However, in the new chart of accounts the ‘Loan in Baht’ account had sub-accounts based on types of loans, such as home loans, commercial loans and staff loans. These categories were reflected in the implementation of ABC. Deloitte co-operated with an Oracle company and developed an ABC concept in consultation with the ABC team. Then, the ABC team used that concept to implement ABC with Oracle.
Oracle helped Bank implement and modify the software to fit its costing model and cope with future changes. Bank created a special team to work with Oracle in order to develop the ABC system to meet its needs. Members of the team were from the Financial Planning Department who knew every aspect of the Company’s business. The team had to communicate with the data warehouse, Oracle and the system unit. An IBM company is responsible for the system unit and programming IT applications.

The team informed Oracle staff of the Company’s needs and an appropriate system was designed. Subsequently, the team reviewed existing data from the Company’s accounting system and checked all items in the financial reports to ensure that there was enough input data for a new system. If existing data was insufficient, the team informed the data warehouse about the data it wanted for the ABC system. If the data warehouse did not have that data, the team asked the relevant departments to send specific data sets. The team believed that data could be recorded in the department of origin and explained the reasons to staff for providing it. Once staff understood the aim of data requirement, they were willing to provide it. By checking existing data, the team found gaps that indicated a lot of data was not stored in the data warehouse. This was because the Company had improved its IT system to include the data warehouse; this had been an opportunity for the Company to review and develop its information system.

After completing the software installation, data from the previous system was transmitted to the new system following consultation with Oracle staff. Some data was transmitted directly from other applications to the ABC system while other data was included after it had been manually prepared. Then, the team ran and tested the ABC system. The costing reports were sent to each department as a cross-checking strategy. Each department sent the team feedback as to whether the cost information was as correct as it should be. If the cost senders unreasonably assign costs to the cost receivers, the receivers should give the senders feedback and the senders should explain the reason for sending those costs. At the same time, the cost receivers developed greater understanding about their costs. Subsequently, once they understood the causes of all the costs, they accepted the costing model.
During the monthly data running process, the team separated the process into two phases. The first phase was to allocate indirect costs of the business departments to activities. This process took around four hours. To allocate direct costs to cost objects takes around two to three hours. The second phase was to allocate indirect costs from the supporting departments and this took around 20 hours because the information needed to be accurate.

Although the implementation of the ABC system was completed, Bank needs to continuously upgrade it in order to respond to changes in the business environment. The revision of the ABC system is expedited through regularly updating cost drivers, launching new products and increasing customer segments. For example, Bank changed the cost driver for branch activities. The total of each kind of transaction was used to replace the fixed percentage for each one as a cost driver for branch activities. The total of transactions in each month was different so the costs of each month were also different. Although the new cost driver provided more accurate cost information, it consumed more time in input data preparation and data processing. Another example, the bank term deposits are calculated every 3, 6 and 12 months. Due to high market competition, the Company launched a unique 7 monthly term deposit calculation rate. The ABC team needed to prepare input data and find new cost drivers for new products following the details provided by the product manager. Moreover, in 2010, the Company wanted to develop another customer segment so the ABC team began verifying the criteria for this in order to set up the cost allocation system.

Consensus had to be reached between participants before the ABC team could compile a summary to present to top management before the process could be finalised. This was the most important stage of the process as all relevant parties had to agree with the cost revision.

Through implementing ABC, the working group, the ABC team and the specialist team did not receive any rewards or extra payment. Interviewee 1-Bank explained that the consulting company had already assisted the team to implement the system hence staff work load did not increase all that much. He asserted that it was his responsibility to work as top management determined.
6.4.4 BANK – Stage 4: Use of Information

Since 2011, Bank has been utilizing the ABC system but its full capacity has not yet been reached. The output has been used for internal monitoring rather than cost management; however, the Company expects to use the output for management by 2012. From the interviews in 2011, Bank uses cost information from the ABC system for reporting and monitoring costs, performance evaluation, pricing and selecting business alternatives.

Bank uses ABC information for reporting costs from every department and preparing annual financial reports. The Company also uses ABC information to control costs; it identifies activities that consume excessive costs and as a consequence, can directly monitor those activities. Moreover, the Company uses ABC information to evaluate performance. Bank sets target profits for each product and compares it with actual profit. This process evaluates the positive or negative of each product’s performance and assists future product planning.

Furthermore, ABC information is used for pricing. The Company evaluates the performance of products through profitability. Therefore, it establishes the costs of products to ensure that they are not sold under cost. Analysts use the cost structure of the old product as the basis for the cost structure of the new one and from which, a cost projection is established. They separate the cost into two categories which are core activity (cost of goods sold) and sustainable activity (selling and administrative costs). They establish the gross profit from the core activity first, and then evaluate the net profit from the sustainable activity to check whether the new product is profitable. Normally, the sales staff know only the costs which occur in their departments. They do not know the costs from other departments that work for them. The ABC system assists them in pricing.

The Company also uses ABC to identify the profit maximisation and high customer satisfaction projects. For example, recently, the Company had two alternatives: one was to keep its customers by retaining niche market but expensive products or to abandon that business and sell it to another company. If it wanted to keep customers, it had to be responsible for all related costs. On the other hand, if it wanted to sell businesses, the
costs included only those of the core activities. Analysts compared the profit and loss statements of both alternatives predicated on making future decision-making and reported to Top management.

Nevertheless, Interviewees mentioned some problems with the ABC system. Firstly, there is a conflict between departments because of the perception regarding the accuracy of the information staff receives. Bank limited the level of access to the ABC system; therefore staff at upper level of management can access more information than staff at the lower level. Staff who received less information reported that it consumed high costs and did not believe the system provided accurate information. All cost information affects staff performance. If the system demonstrates there is cost blowouts staff members are dissatisfied because they will not receive their bonuses. A meeting was held for representatives from all departments to resolve this issue; everyone was shown the costing model and after some deliberation it was accepted.

Secondly, the difficulty of preparing the budget and comparing it with actual costs is another problem. The Budget is assigned on the basis of ROE or efficiency ratio rather than ABB. Due to a lack of information; the ABC team did not know how much money to assign to each department and needed the advice of management to complete the process. To help the developer, management attempted to clarify which department is responsible for the assignment of the budget. The management took advice from the analyst about which department should be assigned the costs. Consequently, the ABC team modified the cost model by using the real transactions multiplied by estimated servicing time. The ABC team met to decide an acceptable estimated time for each transaction. The time aggregate of the previous month’s transactions was used to set the costs of the next month’s transactions.

Thirdly, another problem of ABC is the limitation of the costing software which causes inconsistency between expenses and cost drivers. For example, the commission bill for some products that were sold 8 months ago by direct sales outsourcing, have not sent to the Bank. In other words, there is a delay of commission information getting through hence the cost information that was received during last 8 months was incomplete. However, by the end of the year, the information was accurate but inaccurate on a
monthly basis. This shortfall may be responsible for faulty decision-making, because the Company does not receive information in a timely manner. Due to this issue, analysts use cost per unit based on business plans. Interviewee 4-Bank summarised that ABC was an effective management tool at business level but not at the sub-unit level.

Overall, the ABC system assists the Company to increase its competitive advantage by providing accurate and on-time information.

Interviewee 4-Bank indicated “When we have a new product, we analyse its value chain to identify related activities and costs. If we didn’t use ABC, we would have to review more than 70 sections of the Bank’s operations. Then, we may miss a competitive opportunity. Moreover, with the ABC system, costs of supporting departments are allocated to new products automatically. In the past, we had to revise the costing model every time we wanted to add new products into the model. It was really burdensome”.

6.5 FACTORS INFLUENCING THE PROCESS OF ABC IMPLEMENTATION BY BANK

As a description of a banking business’s experience in Thailand, all contingency factors were found to influence the process of ABC implementation. These factors included the competition, Government policies, service technology and IT, and organisational strategy, structure and culture. The relationships between identified factors are represented in Figure 6-4 and Appendix E.

At the initiation and adoption stage of ABC implementation by Bank, the factors influencing the implementation were the competitive environment, which was affected by changes in the economic and political conditions inside and outside the country, natural disasters, Government policies, and banking service technology. These factors shaped Bank’s organisational strategies in all business units and included changes in costing systems.
During the 1990s, the banking business in Thailand was reformed by the Thai Government, the Ministry of Finance and the BOT in response to the globalisation of the economic and financial systems through the liberalisation of the exchange and interest rates (Section 6.2). This policy aimed at increasing domestic savings and foreign capital inflows, promote the capabilities of the financial sector to compete internationally, and develop Thailand as a financial centre in the Indo-Chinese region. Moreover, local and foreign commercial banks could take deposits or borrow in foreign currencies, and lend the money from within and outside Thailand at low cost. Following the liberalisation of the banking sector, the exchange rate was adjusted to reflect economic and monetary conditions more accurately and the interest rate was adjusted in accordance with demand and supply conditions. Subsequently, the high deposit rate and
the low lending rate were offered to attract customers which led to high competition in the banking business. In 1997, Thailand was affected by the financial crisis due to uncontrollable interest rates, over borrowing and lending.

From the Asian financial crisis in 1997, the loose supervision of the BOT of commercial banks and finance institutions was perceived as a key reason for the Thai economy’s rapid collapse after the Baht was floated in 1997 (Vatikiotis & Keenan, 1999). All related parties, including the Government, the BOT, commercial banks, financial institutions and IMF, worked together to recover the economic situation. The BOT wanted to raise all banks to international standards which led to tightened borrowing and lending and the enactment of several regulations to control and protect the financial sector.

From the experience of the financial crisis, Bank reshaped its organisational strategies and restructured many work processes using the Balance Scorecard concept in order to develop all business units such as customer relations, management systems, operating systems, human resources and IT (Section 6.3.3). The first version of the ABC system was implemented in 2000 to improve Bank’s existing costing system (Section 6.4.1). After the completion of the ABC implementation, Bank focused on increasing its competitive potential and income by initiating several management and operational techniques. Subsequent to these actions, the ABC system was not continually used because Bank paid less attention to its use.

Since 2002, the Government has boosted the domestic economy through an extension of the title fee-reduction and tax-exemption for housing loans (Section 6.3.2). Moreover, the Ministry of Finance and the BOT upgraded Thai and foreign financial institutions to meet full commercial bank status. The BOT issued a directive regarding credit card businesses to tighten credit card interest rate and required banks to establish risk management policies and guidelines. In 2007, Government’s actions increased competition in the banking sector, raised Bank’s operational costs and reduced Bank’s income which led to the decision to implement the ABC system again (Section 6.4.1).

In the design stage, organisational strategy played an important role as a guideline to the design of the ABC model. Changes in organisational structure, IT and
organisational culture also influenced the design of the ABC model. The ABC model, from the first version of ABC system, was revised in accordance with Bank’s organisational strategies and structure and its current situation (Section 6.4.2). In the revision of the costing model, the ABC team had to review all work processes of each department which required the positive participation from relevant employees. Bank has a mainly mechanistic style of organisational structure which means decisions and operating procedures are formalised and centralised (Section 6.3.5). Thus, the participation in the ABC project was discussed and decided at the top level and subsequently assigned to lower levels (Section 6.4.2). With the rigid organisational structure (Section 6.3.5) and strong organisational culture (Section 6.3.6), employees responded to the ABC project as a general task. Furthermore, the ABC team needed to confirm with Bank’s data warehouse that all input was available to use and compatible with Oracle costing software which was adopted for the implementation of the system. Bank had developed its IT system in response to a highly competitive environment since 2001 and also restructured the chart of accounts since 2005. Thus, its IT system was ready to provide varieties of information to support the ABC system.

IT and organisational culture assisted Bank to achieve the implementation of ABC at the initial stage (Section 6.4.3). Oracle costing software supported the cost allocation based activity and the team was helped by Oracle staff to implement and modify the software to fit its costing model. IT staff linked the data warehouse to Oracle software. After completing the software installation, the ABC team sent the first output information to each department to ensure the accuracy of the application. Due to strong organisational culture, the cross-checking period was completed without controversy.

Organisational strategies and culture were important at the use of ABC information stage. The aims of implementing ABC are to acquire better cost information for monitoring costs, performance evaluation, pricing and selecting business alternatives to enhance Bank’s competitive advantage. Bank had been using the information from the ABC system for less than a year and it was used for internal monitoring rather than cost management. Bank uses cost information for evaluating the performance of products, pricing, identifying profit maximisation opportunities and customer satisfaction projects (Section 6.4.4). All uses of cost information are intended to reach corporate goals and
are driven by qualified and dedicated staff in a teamwork culture. However, there was conflict between departments due to the perception of the accuracy of the information staff received; however, this matter was resolved through a robust organisational culture.

### 6.6 FACTORS RELATED TO THE ABC IMPLEMENTATION SUCCESS

The implementation of the second version of ABC by Bank was driven by four contingency factors including organisational strategy, organisational structure, organisational culture and IT, together with the seven success factors described of Shield (1995). These four contingency factors play different roles to support the success of ABC implementation. Moreover, the ABC team and external consultants played important role in implementing ABC successfully.

At the initiation and adoption stage, Top management played an important role through providing clear objectives, sufficient funding and IT support. The objectives of ABC implementation were the enhancement of Bank’s competitive advantage through accurate planning, controlling, decision-making and performance evaluation by using accurate cost information (Section 6.4.1 and 6.4.4). In a top management meeting, the adoption of ABC was formally discussed after Bank used top-down strategy to inform about the project to every department.

At the design stage, Top management formed the ABC unit to be responsible only for implementing ABC and staff who worked for the unit were dedicated to its success. Staff who works for the ABC unit comprised of staff from Accounting, Finance, Business Unit and IT and new staff from the recruitment process (Section 6.4.2). As the ABC model was designed by an external consultant company which was Price Water House Cooper when Bank implemented the first version of ABC (Section 6.4.1), the ABC unit was responsible for reviewing and updating the model. The ABC unit believed that staff who worked for each department knew the costs and activities related to their departments. Relevant employees from each department (non-accountants) were trained in the ABC concept by the ABC team during after office hours for a year.
Moreover, Staff were required to provide a feedback about the details of their departments’ activities and cost drivers which were prepared by the ABC unit for further development (bottom-up strategy) (Section 6.4.2).

**At the implementation stage**, Top management worked together with the ABC unit to select suitable costing software which fitted the ABC concept and Bank’s business environment. Bank also was supported from Oracle consultants for install Oracle costing software for implementing ABC (Section 6.4.3). After completing the installation of costing software, the ABC team also sent the first set of costing reports to each department to ensure the accuracy of cost calculations by the software (Section 6.4.3). Furthermore, forming a link between costing software and the data warehouse assisted Bank to complete the implementation of ABC in a timely manner through efficiently organizing and managing a vast volume of data.

In order to achieve organisational strategies, Bank uses ABC information for evaluating performance, pricing, maximising profit and increasing customers’ satisfaction.

Besides these, the strong organisational culture and effective structure help other factors perform and work well together in every stages of ABC implementation. Bank pays attention to the development of its HR to create a strong organisational culture based on teamwork and customer-centricity (Section 6.3.2 and 6.3.6). Subsequent to achieving an open-minded organisational culture, it was not difficult for employees to accept a new working environment which originated from an innovative costing system that assisted them achieve corporate goals. Moreover, stable and strict organisational structure as mechanistic style lead to clear and robust communications between departments that enabled the implementation of ABC.

**6.7 SUMMARY**

This chapter describes the history of the Bank’s business in Thailand and changes in contingency factors which influenced changes in the costing system and the process of ABC implementation. Moreover, the identification of factors, the relationship between
factors influencing the implementation of ABC by Bank and factors relevant to the success of ABC implementation are explained in this chapter.

The financial business sector in Thailand is dependent on the domestic and international economic and political situation. It needs to provide financial services to domestic customers and competes with financial institutions from neighbouring countries due to the liberalisation of the exchange and interest rates. The Thai Government, the Ministry of Finance and the BOT play an important role in changing the competitive environment of the banking sector. These institutions enact several regulations and laws to control the banking business, enhance the potential of commercial banks and financial institutions, and ensure fairness to all customers. Since the liberalisation of the exchange and interest rates, the competitive environment in the banking sector has been intense. This forces Bank to develop its abilities in every aspect to be able to compete in the market. Bank set its organisational strategies aiming to develop customer relationship, management systems, operating systems, HR and IT. The ABC system was selected as a new costing system to improve Bank’s management systems.

Top management support together with teamwork and an open-minded culture, formal and clear organisational structure and strategy helped Bank implement ABC successfully. These factors enabled Bank to complete ABC training, receive high participation rates from non-accounting ownership and reduce resistance which could have occurred from changing the costing system.

It can be concluded that external conditions, including competition, were the most important factors that compelled Bank to adopt and implement ABC. Seven success factors together with organisational factors played an important role in the successful implementation of ABC.
CHAPTER SEVEN

CASE STUDY THREE – OIL COMPANY

7.1 INTRODUCTION

The previous two chapters presented and analysed two cases that is Telecom and Bank cases to examine contingency factors that influenced the implementation of ABC. This chapter describes the third of the three case studies and presents the contingency factors that influenced the implementation of ABB in the Oil Company (Oil). Oil implemented ABB which is a part of ABC.

The implementation of ABB by Oil was investigated by collecting data on the motivation, design, implementation and use of ABB systems. Moreover, the changes in the external environment that included competition, Government policies, technology (related to IT, oil production and management), and organisational strategy, structure and culture affected the adoption of ABB by Oil. The data collection methods consist of in-depth interviews, document and archival record research as explained in Chapter 4. The findings show that changes in competition which were caused by the fluctuation in oil price and oil demand, increasing environmental concerns and Government policies were the most important factors that motivated Oil to adopt ABB. Organisational strategy played an important role in response to the changes in the external environment through the use of ABB techniques. ABB also supports ECA.

Section 7.2 offers a brief history of the oil industry in Thailand and background to Oil. Changes in the contingency factors related to Oil are described in Section 7.3 and details of the four stages of ABB implementation are in Section 7.4. Subsequently, the factors influencing the implementation of ABB and their success are explained in Section 7.5 and 7.6 respectively.
7.2 A BRIEF HISTORY OF OIL BUSINESS IN THAILAND

The SS Murex was the first bulk-oil tanker built by William Gray & Company, West Hartlepool, England for Marcus Samuel & Company to ship kerosene for the Shell Company to Thailand on 23rd September, 1892. Shell was the first oil company to have a presence in Thailand; in the 40 years following the arrival of the SS Murex, the kerosene market in Thailand expanded as more people used Shell's 'Crown' kerosene as a domestic fuel.

Messrs Markwald & Co. were named the first agents in Thailand to market all Shell products. Later, Asiatic Petroleum (Siam) Ltd., a subsidiary of the Royal Dutch Shell Group of Companies appointed Borneo Co. Ltd. as the official Shell representative in Thailand. In 1921, the Ministry of Defense established Thailand’s first oil refinery in the Fang Basin in an attempt to influence the price of oil in the marketplace. Part of that strategy was to prevent international oil companies from sole control and to maintain emergency reserves. During World War II (1939-1945), all operations of Asiatic Petroleum (Siam) Ltd were suspended and as a result, the importation of kerosene, gasoline and other related petroleum products increased. In 1946, the Thai Government invited Shell to return to Thailand and resume its pre-war operations. Asiatic Petroleum (Siam) Ltd. changed its name to The Shell Company of Thailand Limited. (Shell Thailand, 2012)

In the same year, the Thai Government announced a tax on oil production and expanding refining capacity to 20,000 barrels per day was the only one way to maintain profitability. The company did not attract enough investment to justify this level of expansion so the Government advertised a fifteen year lease of the oil refinery, on the condition that production capacity must increase. Finally, Summit Industrial Corporation (Panama) bid for the lease and over the next four years increased production capacity.

The price of oil remained fairly stable until the 1970s. During this period the increase in the price of crude oil was one of the causes for industrial unrest, inflation and political instability in the Middle East, Europe and Asia. Please see Figure 7-1 showed the oil price in the 1970s.
The rise in worldwide crude oil prices during this period led to a global economic crisis. The Thai Government considered adjusting retail oil prices which caused persistent objections from labor unions and student unions that demanded the nationalisation of the oil refinery. Nationalisation occurred but the condition of the oil refinery had deteriorated and had accumulated losses of approximately 4 billion baht.

**Figure 7-1: Oil prices between 1861 and 2011**

![Crude oil prices since 1861](image)

Sources: BP workbook of historical data (BP, 2012)

### 7.3 OIL BACKGROUND

Oil was established in 1985 by the Cabinet of Prime Minister Major-General Prem Tinsulanon, in order to put the oil refinery on a profitable basis. The Company’s Mission Statement included the following goals:
• To be a secure Thai company operating a petroleum business consistent with the common good.
• To be a company that helps develop a better quality of life for all Thais.

These changes resulted in efficient management of the refinery especially as they stressed the overall benefit of fostering a secure and progressive business, establishing self-reliance guidelines and a corporate culture of creativity which inculcated the staff with the notion that they should provide positive role models for the company and the community. Within 5 years, the company overhauled its failed business to achieve profits of Baht 500 to 800 million (USD 16.7 to 26.7 million) per year. It became one of the top ten Thai businesses in terms of sales and was praised by influential members of the community as having set a good example, in terms of both organisation and people. The Company’s success at that time was credited as a major success of the Government.

Before August 14, 2003, Oil had the status of a State Enterprise, as the Ministry of Finance (MOF) held 48% of registered capital of 522.04 shares. The MOF granted financial assistance to the Company in providing guarantees for loans as well as direct lending. After that, Oil recapitalised the sales of warrants in order to decrease the shareholding of the Government. In May 2006, the leading Thai oil company, PTT Pty. Ltd., became the major shareholder of Oil. As a result, the Government holding dropped below 50% and Oil automatically ceased to be a State enterprise. As a result, Oil cannot receive any direct Government support however, the MOF maintains the guarantee on the outstanding 7,000 million Baht (USD 233.33 million) principle of depository receipts that will not be converted to common shares for another six years (ending in 2014). The Government assigned Oil the responsibility of maintaining energy security for the benefit of the Thai public.

At present, Oil owns and operates a refinery with a production capacity of 120,000 barrels per day. It also operates businesses in retail and wholesale for refined petroleum products through 1,000 service stations. Its products include LPG (Liquefied Petroleum Gas), Gasoline (Benzene), Diesel Fuel, Jet Fuel, Bunker Oil / Fuel Oil and alternative energies (Bio Diesel, Ethanol, and Solar Energy).
In 2011, Oil was the third-largest oil retailer through its service stations, with a market share of 13.4% and 935 employees. It was listed on the SET in 1993 and from 2010, its market capitalisation was approximately Baht 16.8 billion (USD 0.56 billion). This places Oil in the top 50 listed companies on the SET.

7.3.1 Changes in Competitive Environment in the Oil Industry

Oil is one of the main materials in most industries and one of the main difficulties with the oil business is the fluctuating oil price. After the economic crisis in 1998, the Thai economy recovered as a result of growth in all industries which lead to an increase in domestic oil consumption. The domestic demand for oil increased from the fourth quarter of 2003 by 17.7% which meant that Oil had to increase its refining volume from 75,000 to 90,000 barrels per day.

Although Thailand has its own oil resources, it is not enough for the high demand of oil consumption and oil companies have to import crude oil from the countries which are members of the OPEC (Organisation of Petroleum Exporting Countries). The OPEC is a consortium of 13 countries: Algeria, Angola, Ecuador, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates and Venezuela. The world’s oil price is controlled by OPEC and major oil importers such as the United States, Mexico, Canada, Equatorial Guinea, Russia and China which Thailand has less power in price negotiation. The economies, currency, natural disasters and political conflicts in these countries affect the oil price both outside and inside Thailand. For example, a rise in world demand for oil, especially in China and the USA, an increase in the demand on heating fuel (because of colder weather), unrest in the Middle East, the Hurricane in the Gulf of Mexico and the recovery of many European countries from debt problems bolstered investors’ confidence in global economic expansion which lead to a universal increase in the price of oil.

Even if the selling price of finished oil products is dependent on the international markets, oil companies cannot set their own prices. Most Thai companies produce oil for the local market and have to be careful of the price set for the export market. That price affects the demand and supply of oil market in Thailand.
Interviewee 2-Oil said “For example, if the importing price of oil is cheaper than the producing price, people will want to buy imported oil rather than locally produced oil. This will affect the refinery plants in our country. Therefore, a standard oil price is needed for the oil industry.”

The sale price of finished oil products in Thailand is based on the average price of finished products in Singapore at the point of sale. The Singapore market is the largest oil trading markets in the Asia region. Moreover, the quality of oil products among oil companies in Thailand does not differ substantially because they buy crude oil from the same sources and sell finished oil products to other oil companies.

With the same price and quality, all oil companies consequently focus on developing its business at service station level and minimising operating costs rather than being working towards a pricing strategy that will maintain its market share. The service stations in Thailand serve consumers a variety of products that includes petrol, coffee, food, car service products, toiletries. The competition in the service-station market in Thailand is fierce and in 2011, Oil, through its service stations, was the third-largest oil retailer with a market share of 13.4%.

7.3.2 Government responds to the fluctuation of oil price by launching policy

Due to the continual increase in oil prices coupled with an increase about environmental issues, some industries began to use alternative energy. The Thai Government controlled the domestic oil price through the Oil Fund in order to prevent domestic economy from the fluctuation of oil price. The Oil Fund which was established in 1979 by the Thai Government collects the regular income from Oil Fund Tax levied on importers and domestic producers (ESCAP, 2003). This money reserve will be used to maintain domestic retail price level at a set ceiling in times when global petroleum prices soar by subsidizing domestic oil producers and importers. The Government believes that the Thai economy will not be affected by the oil crisis, if domestic retail oil prices could be maintained.

Moreover, the Government encourages Thai people to use alternative energies and save energy throughout the country by launching several energy saving campaigns. The Government also enacts environmental regulations to prohibit selling fuel oil with 3%
sulfur in all industrial regions and this initiative increased the consumption of alternative energy.

7.3.3 Oil’s Organisational Strategies and Technology

During 2003, in response to the change in the oil price, Government’s policies and production technology, Oil rebranded itself through the slogan, Greenery Excellence as its intention was to create energy that was environmentally friendly and sustainable. The aims of Company were, to continue to develop new products of high quality that were environmentally friendly for retail at service stations and convenience stores.

Oil improved production technology by investing in the project to upgrade oil quality through the PQI project (Product Quality Improvement). The PQI project increases refinery capacity and improves its efficiency. The UOP’s Hydrocraking Complex refinery system, which is included in the PQI project, helps generate a greater amount of clean diesel and benzene. In the past, Oil’s refinery was categorised as a ‘simple refinery’ which could produce a high portion of fuel oil (bunker oil) which is a lower-value product. Oil could not produce high quality fuel oil hence it sent product to the Cracking Unit of the Thai Oil refinery to refine into benzene and diesel to increase income. This affected the competitive status of the company, although a simple refinery operation consumed less expenditure in chemicals, maintenance costs and energies. Oil became a green complex refinery through the PQI project which was formally initiated in December 2009. Oil also uses sophisticated technology to measure the level of sulfur in fuel oil in response to environmental laws and regulations. A gasohol blending system was installed to facilitate the increase in gasohol sales at service stations.

Oil was the first company in Thailand to sell gasohol 91 in response to the policy to replace leaded petrol. The Company focuses on selling and developing alternative energy such as gasohol and biodiesel. In 2004, it cooperated with the Department of Alternative Energy Development and Efficiency to research the biodiesel production as a replacement for diesel. Oil completed the installation of a biodiesel production unit at the refinery in 2006 and the construction of a biodiesel plant in 2009. Later, Oil became a renewable energy leader. Moreover, since 1997 Oil has implemented ISO 14001 which is the standard for refining petroleum production, environmental management
and hygiene. In 2005, environmental accounting was implemented for the purpose of gathering costs of environmental issues and their management.

To deliver organisational strategies, Oil upgraded and developed its IT system. It installed SAP IS Oil & Gas Solution for the working system of sales, debtors and transport in order to increase efficiency in cost management and to reduce expenditure and working time. It also installed E-Payroll, E-Document Workflow and E-Procurement to enable business expansion and competition through increasing efficiency, the speed and accuracy of the database connection and the work systems. Moreover, Oil increased the professionalism of personnel management through implementing PeopleSoft Enterprise software to develop the E-HR system. It created the E-Library and E-Learning resources to encourage employees to study as well as share their knowledge with each another.

Moreover, several management techniques were implemented to enhance the Company’s potential and achieve its organisational strategies. Due to the nature of oil business, Oil implemented ISO 14001 in 1997 to enhance petroleum refining production, environmental management and hygienic standards. It implemented OHSAS 18001 in 2004 to enhance vocational hygiene and safety standards. The Company also has applied the Total Quality Management (TQM) approach since 1997 to improve quality of products and working performance. Moreover, Oil implemented ERM in order to deal with unexpected situations such as the fluctuation of oil price and oil demand, natural disasters and economic crises.

The Company has utilised KPIs since 2004 as an instrument for planning and controlling activities. It applied Activity Based Budgeting to monitor and control the Company’s expenditure that is associated with its progress or success levels, in order to achieve greater efficiency and effectiveness in financial management and control. ECA has been used as a tool to gather costs for environmental use and to manage and make decisions on environmental issues since 2005. In 2008, the Company introduced the Thailand Quality Award (TQA) as a guideline or standard to analyse, verify and improve work processes in terms of greater efficiency, effectiveness and compliance.
with world class standards by initially reemphasizing the PDCA (Plan-Do-Check-Act) in daily work processes.

Enhancement of management efficiency resulted in a decrease of costs and a growth of income as well as an increase of market share through retail service stations, industrial and lubricant oil markets.

7.3.4 Changes in Oil’s Organisational Structure

Organisational structure of Oil has been mainly restructured for three times in 2002, 2004 and 2010 in order to respond to the uncertainty of external environment (see Figure 7-2).

Prior to 2002, Oil's organisational structure consisted of three main departments which were Retail Marketing, Industrial Marketing and Lubricant, and Accounting and Finance. In response to the continued growth of Oil's petroleum sales, Oil believes business information is important for making the best decisions and setting the right business strategies. It restructured its organisational structure to four departments by 2004 including Refinery Business, Marketing Business, Corporate Administration and IT, and Accounting and Finance. By 2008, Oil had set up Business Development and Strategy, a new department, in order to respond to the Company’s role as a renewable energy leader. This new department helps the Company develop quality products that are innovative and environmentally friendly. Figure 7-2 shows Oil’s organisational structure in 2002, 2004 and 2008.
Figure 7-2: Oil’s organisational structure in 2002, 2004 and 2008

Sources: Oil’s annual reports between 2001 and 2010 prepared by researcher
7.3.5 Oil’s Organisational Culture Building

Referring back to Oil’s primary objective which is to enhance the living standards of Thai people through strength and independence, it recognises that a strong organisation must be based on effective personnel strategies. To that end, Oil considers Good Corporate Governance as an essential element of corporate culture since its inception:

“the Company shall develop sustainable business, while safeguarding the environment and the society” (Oil Company’s website 2012).

Consequently, it has become a corporate culture which is in line with staff culture that states,

“Staff shall be virtuous, knowledgeable and helpful to others” (Oil Company’s website 2012).

Oil has always focused on developing staff competencies, enhancing employee relationships, protecting employees’ rights, offering fair remuneration and welfare packages, and encouraging employees to support communities. Oil manages its HR effectively by rotating staff to work in other departments which results in a multi skilled workforce that has a deep understanding of the Company’s operations (Interviewee 2-Oil). This strategy results in a co-operative approach to increased performance and reduces conflict in the work place.

**Employee development programs**

Oil prepares its staff for change, from internal and external factors, through continued training and other personnel development activities. This strategy enhances staff knowledge and understanding of the changing situation as well as developing capabilities that are pertinent to a modern technological workplace. The employees attend local and international seminars for the purpose of technical and operational training during which they are encouraged to express opinions which in the future, could be implemented within the workplace context. The courses emphasise the need for enhanced planning, problem solving and risk management skills and the need for
functional level knowledge of environmental protection, energy preservation, relevant laws, regulations and specific *know-how* techniques.

Oil has cooperated with consulting agencies in organizing a project to develop staff knowledge, skill and competency. This project identifies the core competencies of the organisation as well as the functional competencies of each position description. There are six core competencies consist which are as follows:

- *Ability for Adaptation and Initiation*: an open mind to change and creative thinking.
- *Leadership*: people with vision and courage to think and behave correctly in a transparent way for the organisation’s sake.
- *Teamwork Spirit*: the readiness to work and help others as well as recognise the value of teammates.
- *Organisation Commitment*: the dedication to push the organisation towards its goals in a professional and efficient manner.
- *Personal Mastery*: eagerness to learn and acquire new knowledge and the readiness to use that knowledge to increase the capability of the individual and the organisation.
- *Social and ‘SHE’ Awareness*: an awareness of and action on safety, health and environment in line with international and organisation standards as well as an awareness of public service for the benefit of the organisation, communities and society.

Oil launched an e-library to make information accessible at all times and promote the Company as a learning organisation.

**Employee relations**

Oil has been developing a staff culture based on happiness which can be achieved through staff fulfilling their duties, improving their performance and understanding the nature of the business. The Company has always supported positive employee relations.
in the interest of increased workplace unity and to encourage participation in the Company’s activities. The Company believes it is important to create moral values among employees that include an understanding of the nature of their jobs and the business environment. Important employee relations programs include staff birthday activities, trips away, religious activities, medical expenses, service buses, children’s day for families and relaxation and entertainment groups. Oil supports the establishment of clubs for employees with different interests emphasise cooperation, participation, learning, responsibility and growth as well as lifelong learning. The different clubs include bird watching, marine conservation, photography, healthy mind and body, water-colour painting, Thai classical music, Western music, badminton, football, swimming and tennis to name a few.

Moreover, in order to systematically develop employees to meet future organisational needs, the Company has integrated individual career paths with rotation plans and the talent management program. Merit assessment has been developed based on the concept of Performance Based Pay. There is a focus on inter-communication among management and staff to periodically realign organisational targets and action plans, as well as improve the work environment.

**Employees’ remuneration**

Oil provides appropriate and fair remuneration and welfare to all employees such as monthly salaries, shift pay (day and night), over time and upcountry allowance, refinery standby pay and disciplinary work pay. Staff can be members of the provident fund by investing five or ten percentages of their monthly salaries which is matched by the Company and invested in the fund. They have the right to be allocated warrant for newly issued shares under the Employee Stock Option Program (ESOP), taking into consideration, duration of work, responsibilities, performances and potential of the employee. A 100% reserve is established at the end of each accounting year on pension amounts payable to all employees with five years and over service. The Company has created the Employee Joint Investment Program (EJIP) to motivate employees and keep human capital within the Company for the long term.
In EJIP, employees have the choice to participate in a savings program by buying the Company’s stock. This program creates a sense of joint ownership for employees and has a positive effect for the Company’s business progress. EJIP is an investment program for the periodic accumulative buying of the Company’s shares, established to serve as another means of compensating Company employees and executives.

In order to protect employees’ rights, Oil has initiated and provided support for the establishment of a Labour Union and 20 percentages of staff are members. The Labour Union has cooperated with the Company in taking care of the employees’ living conditions by maintaining regular meetings with high-level Executives. The Company set up the Employees’ Committee to act as representatives of the employees. Half of its members are elected from all staff and the other half are nominated by the Company. The Committee works as an intermediary or the voice of the employees in case they feel that they are unfairly treated.

**Employees’ Services to public**

Oil encourages staff awareness in public service through the principle of CSR. Employees volunteer to teach children in the nearby refinery communities 1-1.5 hours before the end of office hours. After work, employees organise activities for children in the communities in the vicinity of the refinery and assist those communities with the organisation of national festivals. Moreover, staff from the environment and safety training centre provides education for nearby communities about fire prevention, with particular emphasis on household fires. For example, they provide training on how to check and maintain the power system and electrical appliances, as well as instructions on the use of fire extinguishers and procedures for handling emergencies. Apart from training on safety and environment, the Company also provides training on EMA, which is a popular tool in financial and environment efficiency for people in the community.

As a result of the development of HR, the rate of employee satisfaction in 2008 was 88%. In 2009, Oil achieved progress in growing the relationships and bond between employees and itself. According to a consultant’s findings in a survey on employee engagement, employee engagement for the company was ranked in the 44th percentile.
when compared with other organisations throughout the world. These results reflect the employee high level of engagement with the organisation and a willingness to dedicate them to the success of the organisation.

7.3.6 Accounting and Costing System of Oil

Oil records all business transactions in accordance with Thai Accounting Standards through the SAP system. Oil uses traditional costing systems for cost allocation and inventory valuation through an absorption costing method. For management purpose, Oil focuses on total cost rather than cost per product. Because the selling price is depended on the market or the demand of the consumer, the Company needs to know only the net profit of selling all products.

Interviewee 1-Oil illustrated that “this oil is a composition which provides various types of products after refinery. Each product has different value and different demand; as a consequence, the selling price is different and depends on market demand. It is similar to sell pork. Farmers sell pigs to a slaughterhouse for the whole lot (flat rate). Farmers earn money from feeding and transporting pigs. A butcher sells each part of pork in different price because each part has different tastes and different demand. Pork bone might be cheaper than its cost. However, we don’t need to know cost per part. We want to know only net profit of selling this whole pork (total sales - total costs). Therefore, we don’t need to get profit from selling every product which is similar to our business. Our system will sell products based on their values.”

The cost per product is calculated based on the production ratio and is used for bookkeeping purposes and for deciding products of which the Company should increase production.

The design of the accounting and costing system of an oil company is based on the character of business activities.

Interviewee 1-Oil explained that, “Accounting for an oil company is different from a fruit company. We design our accounting system based on the character of the activity. When we buy raw material (crude oil), we need to know what type of crude oil it is, how to buy crude oil, the time of buying and the amount of crude oil we want to buy. The accounting system designers have to know how to record transactions; for example, if
crude oil is transported by ship. It is different from general accounting which has revenue and expenses. We have to control all activities and we need to know how much we spend on each activity and compare it to our budgeting.”

Total cost of the business is accumulated from three main business activities which are refinery, marketing and new business.

Figure 7-3 illustrates the business operations of Oil based on business activities and related costs of each activity. The first activity is a refinery activity which includes oil procurement, oil refinery and oil distribution. In oil procurement, the Purchasing staff contacts the oil suppliers to order crude oil. Telephone bills are costs related to this activity. Then, crude oil is shipped to the refinery plant which includes a freight fee and a ship parking fee during the loading of oil onto the ship. Purchasing staff calculate all expenses related to the shipment. The costs of oil procurement includes crude oil, CIF costs apply should the company have to shift raw materials by itself, ship fares, docking fees, wages, petrol and oil loss. Oil loss is oil that evaporates during transportation to the refinery. Temperature affects the amount of oil and it expands in hot weather and shrinks in cold weather.

At the same time, Plant staff prepares additives and Human Resource staff checks the efficiency and capacity of the plant for production. Moreover, the Plant has routine pre-maintenance to ensure the efficiency of production and waste management. During the refinery process electricity, water, additives, energy (such as gas and NGV) and wages/salary of staff who work in refinery plant) are included. The costs related to waste management are environmental costs namely material costs of product outputs, material costs of non-product outputs, waste and emission control costs, prevention and other environmental costs. The finished products are sent to market by ship, the cost of which is included in transportation costs and wages.

Marketing, in order to retain the competitive edge, is responsible for promotions, advertising, product analysis, competitors and customers. Marketing creates product differentiation and develops service stations services as part of its strategy. After that, Marketing delivers products to customers. Customers can choose to pick up products by
themselves in which case, Marketing will invoice them. The costs related to this activity include travelling expenses, land rent, office rent, salary, compensation, advertising cost and customer relationship cost.

**Figure 7-3: The working process and related cost of Oil**

Source: Prepared by researcher based on the information from company annual reports and interviews

The last activity is new business which relates to the research, development and sale of new products such as solar power, biofuel, ethanol and research plantations. The costs related to new business activity are costs of research and development and the cost of selling new products.
Central management includes administrative staff in the Planning, Accounting and Finance and IT departments assist refinery, marketing and new business activities. For example, the Debt and Accounting department bills customers for products and records sales transactions respectively. Thus, the costs of central management are assigned to Marketing, the Refinery Plant and New Business based on the amount of activities it performs for both. Each department in central management evaluates itself regarding the amount of work it does for each activity. At the end of the year, the Company gives each department in central management a work evaluation form to calculate the amount of work it did for Marketing, Refinery Plant and New Business. Accounting incorporates the functions into the SAP and allocates the cost of central management to each business based on proportion.

Moreover, Oil uses ABB as a planning and control tool and functional budgets, such as the sales, production, cost of production and purchase budgets are prepared based on the expected EBITDA of the future plan. The process of budgeting by Oil is detailed in Section 7.4.

7.4 THE PROCESS OF ABB IMPLEMENTATION BY OIL

7.4.1 OIL – Stage 1: Initiation and Adoption

In oil business, over 90% of major costs is ‘crude oil’. The Crude and finished oil price in Thailand are dependent on international markets. The finished oil price is based on the average price of finished oil in Singapore.

Interviewee 2-Oil said “We do not produce oil for selling only in Thailand; we also export it to other countries. If we set our own price without considering the price of the export market, it will affect the demand and supply of oil in our country. For example, if the importing price of oil is cheaper than the producing price, people will want to buy imported oil rather than locally produced oil. This will affect the refinery plants in our country. Therefore, a standard oil price is needed for the oil industry.”
The changes in the oil price are affected by the changes in oil supply and demand which are caused by changes in economies, politics, natural disasters and the exchange rate from both inside and outside the country. For example, the political tension and hostilities in the Middle East in 2004 led to an increase in the crude oil price. The Company’s refining business in Thailand is dependent on the US currency because it needs to import crude oil and pay in US dollars and this affects the cost of raw materials and revenue of the Company. The domestic ex-refinery price of refined products is converted into the Baht from the reference price in the Singapore market where the US dollar is used. These lead to the fluctuation of oil price in international and national markets.

Oil imports crude oil from the Middle East and the Far East for refining in Thailand, and then it is sold as finished oil inside and outside the country. Therefore, the change in oil price has an effect on the cost management of Oil. In 2005, the Company faced the highest fluctuation of oil prices in 20 years of business operations due to the rise in world oil consumption, especially in China and the US, which was exacerbated as oil production had reached near capacity. As a result, the cost of oil production has increased since 2005 and the Company could not control the cost of raw materials.

However, Oil can control its overhead costs by improving the quality of products and services and using the efficient management. Oil focuses on improving refinery efficiency in order to increase production yield and save energy during the production process. It also focuses on increasing the quality of services at service stations. The Company applies many management techniques which lead to efficient procurement of crude oil and cost management of the business however, staff focus on profit more than cost which is not the main concern of the Company. The Company identified the budget as KPI in order to control both costs and staff. Moreover, it controls its operations by checking whether its EBITDA (Earnings before Interest, Tax, Depreciation and Amortisation) remains positive.

Oil has applied ABB since it was established to monitor and control the Company’s expenditure in order to achieve greater efficiency and effectiveness in financial
management and control. The Company has not implemented ABC because of the following reasons.

Firstly, the Company focuses on total cost rather cost per product for management. It identifies cost per product for only bookkeeping purposes in order to prepare the financial statement at the year’s end. The ABC system helps to calculate cost per product which is usually used for pricing; but, the Company cannot set a selling price by itself because the selling price is dependent on the MOP (Market Operative Price). Moreover, the identification of cost per product in the oil business is difficult,

as Interviewee 2-Oil said “We provide energy to separate oil into many kinds of oil products, so how can we know how much cost each product consumes.”

Therefore, the implementation of ABC in order to calculate cost per product is not necessary for Oil.

For bookkeeping purposes, Accounting appraises inventory and costs of goods sold by allocating total cost based on production ratio [(raw materials + processing costs) * production ratio]. Production ratio is calculated from the ratio of the selling price at the Singaporean Market [(Psing / cost S) * Yield of inventory appraisal]. This is known as the Regulus Model.

Secondly, the Company believed that the ABC concept can only be used by the oil companies in a general sense because of the complexity of production and, since it was established in 1985, it has used the ABB concept. As Interviewee 1-Oil explained, the oil industry has to be concerned about actual costs,

“All oil companies have used this concept since crude oil was first discovered in Pennsylvania, America. When they found crude oil, they had to think about how to dig, how to refine it, and then how much to sell it for. These issues made them think about the activities they used and the money they invested to get crude oil. Thus, ABC has been used in the oil companies for ages but it wasn’t known as ABC. Activities performed are seemed as a strategic tool for increasing the competitive advantage. Companies will choose activities which will help them to gain maximum benefits at minimal costs. They must design their own activities, and then consider how to perform
7.4.2 OIL – Stage 2: Design

The design stage discusses the structure of the budget prepared by Oil. The structure of budget is designed from the Company’s costing structure; see Figure 7-4 showing the working process and related costs of Oil.

In the design of the costing and budgeting system, Oil had always used Esso Company’s system because its top managements were from Esso. After that, it applied the best practice of the oil industry and modified the system to fit its environment. The Company also hired Thai professionals and accountants from the oil business to design the system so the eventual system was developed using the same concept as the ABC system. However, the Company does not call it ABC; it has no specific name for calling ABC.

The budget is prepared based on business activities before the end of the current year in order to reach the expected EBITDA. The expected EBITDA is set by the top management. Then, Refinery and Marketing reach a consensus about the quantity of oil production which is expected to reach the expected EBITDA. After that, the consensus is communicated from top to low level through the hierarchical structure. Each business estimates its activities and expenses based on the expected quantity of production. Refinery estimates the costs which relate to three main sub–activities which are oil procurement, oil production and oil distribution. Marketing also does the same through its sub-activities namely selling, marketing and service development. The information which is used to design and estimate activities, cost driver and expenses are collected from SAP, E-library and industrial best practices. Therefore, the expected EBITDA is accumulated from estimated Sales deducted by estimated costs of the refinery activity, estimated costs of marketing activity and estimated costs of central management. If the EBITDA does not reach its goal, the budget needs to be revised.
Figure 7-4: The working process and related costs of Oil

Source: Prepared by researcher based on the information from company annual reports and interviews
The cost drivers and activities are uncomplicated because the Company focuses on an overview of its costs and allows each department to push itself to reach the corporate goal. The staff cost, for instance, is easily allocated to each activity because the Company assigns work to staff in that manner. Furthermore, Oil does not focus much on costs per product because it is complicated to allocate some costs to products. For example, if the refinery plant needs to produce products to reach the expected yield it needs to reduce energy during the production process. However, to allocate the costs of energy reduction during the refining process to sub-activities is complex. Through the distillation of crude oil, all types of finished oil are produced by one set of raw materials and overhead. Subsequently, it is difficult to identify how much raw materials and overhead each type of oil consumes. However, this information is not necessary as all activities concerned with cost reduction achieve the expected EBITDA which is the objective of the Company’s business plan.

7.4.3 OIL – Stage 3: Implementation

The implementation stage is about the process of budgeting preparation which starts with cooperation between all departments in order to set the budgeting plan, to the control and the evaluation of the budget. The budget of the next operating year is prepared before the end of the current year.

The first step of preparing the corporate budget is the meeting between the Refinery and Marketing business to discuss strategic plans, KPIS, EBITDA in corporate with the company’s goals for the next year. The Refinery takes care of production; while Marketing takes care of sales and promotion. Marketing tries to sell products as the Refinery requires. The expected EBITDA is based on the evaluation of the economic situation and the oil price for next year and the capability of the Company.

During the second step, top management challenges each department to create strategies which it enables to help the Company reach organisational goals based on its capability.

Interviewee 2-Oil, 10-9-12 said “*each business has to design its future activities and prepare a budget that reflects its activities. These activities might reduce costs and/or increase revenue in order to assist the company in reaching the business’s goal*”
Refinery and marketing businesses and all departments design strategies or activities which can help them to reach the expected EBITDA and prepare their own budgets.

In general, the Refinery needs to buy crude oil three months in advance. Because of the fluctuation of oil price, the Company does not know what the oil price will be and the amount of oil available in the next three months. It needs to plan for buying crude oil in order to get the right type of oil it wants, maximise the company’s investment and produce oil which meets the customer’s demands. Moreover, Purchasing and Engineering have to work together. Purchasing needs to find the oil which meets the quality that Engineering requires. If it was not able to find that oil, Engineering has to anticipate problems which will occur later on. Engineering controls the production of oil in order to get the expected yield which is required by Marketing. The refinery uses ERM to do a weekly production plan in order to reach the expected EBITDA.

During the third step, the Budgeting department collects, organises and analyses the budgeting reports from each business. Then, it prepares the corporate budget for top management’s approval. After that, each department is provided with money to start its activities.

The last step is to control and monitor the budget. After the actual costs have been incurred, the Planning and Policy Unit follow up all budgets by comparing the weekly budgeted costs and the actual costs and the Budget Unit controls expenses. The Budget Unit also evaluates performance in the Marketing and Refinery businesses in terms of revenues, expenses and profit. If there was something wrong with both businesses, the Budget Unit would reconsider their respective budgets and change some strategies to fix the problem in order to reach the expected EBITDA. An unexpected situation can affect the Company such as protests, floods and earthquakes. For example, when the aircraft hit the World Trade Building on 11th of September 2001 in USA, the oil price around the world was affected and the Government changed its policy to encourage people to use Ethanol rather than Benzene. Then, the Company needed to revise its budget. Likewise, in early 2011, the Company launched an advertising campaign stating that it would give customers a car. During the middle of the year, Bangkok was flooded
and the Company had to offer a boat instead of a car. Thus, through updating situations both inside and outside country helps the Company to reduce operating risks.

**Implementation of ABB and information technology**

In the past, Refining and Marketing activities did not separate data clearly which meant the activities were difficult to manage and control. The Company couldn’t separate profit and loss for each business (Refinery and Marketing) and as a consequence, it couldn’t compete in the market because it did not know the actual costs of each business. It was also difficult to get accurate cost information for budgeting.

In 2004, the Company restructured and separated business activity into two main businesses which were Refinery and Marketing. Moreover, in 2005, Oil upgraded and developed IT systems by installing SAP IS Oil & Gas Solution for sales, debtors and transport as it provides more in-depth information for budgeting.

The Company uses information from SAP for analysing and mapping the information system. The Budget unit enters expense information from SAP into separate spreadsheets which identify the variable costs of each activity and which costs are consumed by logistic or operating process. The SAP has a formula which links expense information to each cost object to classify information (logistic or operating process) in order to prepare the report for top management. The Company believes that SAP can provide real time and accurate cost information which can enhance the efficiency of budgeting preparation and the effectiveness of decision-making.

One important task when compiling the budget is the experience of Unit staff. Consequently, Oil encourages the budgeting staff to visit other oil companies in order to observe how they estimate projects. Budgeting needs to build activities based on knowledge and experience to enable it and staff from other departments to prepare detailed and effective budgets. Oil has installed an e-library and e-learning to enhance employees’ knowledge of the oil industry.
7.4.4 OIL – Stage 4: Use of Information

During this stage, the costing and budgeting structure is used for cost management. Interviewee 1-Oil believes that ABB helps Oil to minimise costs and gain a competitive advantage. In practices, the ABB enables Oil to manage the cost of logistics, select investment projects, evaluate projects after investment and reduce environmental costs.

Firstly, the company use ABB to estimate and select the methods of transportation or Supply Chain Management. Each method has different activities, energy consumption, labour uses and transportation amounts. The Company needs to know the costs of each type of transportation and selects the best method for optimisation.

Interviewee 1-Oil explained, “If we select to ship by car, we can ship a small amount of raw materials at the cheapest cost. However, we need lots of car drivers. This is an element of the supply chain. Each type of transportation such as car, tube or ship is different. Some types are for specific applications. We need to inspect each one before selecting the type of transportation. Thus, we need to be concerned about the cost of capital (investment costs) as well as with expenses.”

In order to estimate transportation methods, the Company considers every activity of each mode in detail. It considers such issues as the number of people needed, what resources are used and the quantity of resources consumed. The Company selects the best method based on that information. The Company also uses linear programming to find the co-efficient of each choice, and then creates equations to find the optimisation. If X is changed, how Y is changed. We have to find X which minimises and optimises Y. The information for estimations is derived from the company database. If there is no information in the database, staff will acquire it through discussion with the plants or finding out by themselves. In-depth and detailed information helps to estimate the project accurately and especially created equations assist in finding the best model.

Secondly, the ABB helps to plan the investment of new products. For example, one type of oil is at EURO 3 standard, but the Company wants to produce oil at EURO 4 standard. The Company needs to set up a new production section to manufacture this product so ABB is needed in order to estimate additional costs. Every relevant department identifies their additional activities and calculates this into the cost per litre.
Moreover, this information is used only once for setting a premium on the new product in the international market which does not depend on the float rate or the national price. Therefore, the Company can set its own price and the price is from Benchmark + Premium. The Lubricant Oil Unit is responsible for pricing. The price is calculated from production cost, marketing costs and mark-up price; however, the price needs to be based on the market price. It is easy to set the price for lubricant oil because all relevant costs are clearly separated from the cost at the oil refinery. The Company uses an estimated percentage of central management cost to assign pricing to the lubricant unit.

Thirdly, ABB is use for evaluating the project after investment. The company needs to implement PDCA in order to evaluate the project and verify the basis of assumption for activities included in each type of transportation.

Fourthly, the Company uses ABB to identify and reduce environmental costs. The ABB contains all business activities which include environmental activities. After the implementation of ISO 14001: Environmental Management in 1997, Oil continued to implement EMA in 2002 to order to reduce natural consumption and waste. Oil started to reduce the use of chemical substances in the refinery process. Engineers have to identify activities which relate to the refinery process and which activity consumes high chemical substances. Then, engineers find a way to reduce the use of chemical substances by that activity. Oil can reduce the substance use from eight tons to six tons. It has found the quality of fresh water was still high.

Interviewee 1-Oil summarised that, “ABB is helpful for production planning, operational planning and business planning. The accuracy of ABB information helps the Company design better business strategies and has more confidence in its decision-making. Without ABB, the Company’s decision-making, operations and optimisation would lack accuracy. Optimisation should be from real time ABC information which would help the Company to consider re-optimisation without delays and this would be a victory for the business.”

However, the most challenging part of budgeting is the accurate evaluation of the success of activities because some activities show results immediately while others
need more time to mature. It is difficult to identify accurately which activities will increase revenue. Sometimes an increase in revenue might be due to the failure of its competitors.

7.5 FACTORS INFLUENCING THE PROCESS OF ABB IMPLEMENTATION BY OIL

In previous sections, a history of Thai oil industry and the changes in each contingency factor in Oil context and the narrative of the process of ABB adoption by Oil are explained. Six contingency factors including competition, Government’s policies, oil production technology, organisational strategy, organisational structure and organisational culture were found in influencing the process of ABC implementation. The relationships between identified factors are represented in Figure 7-5 and Appendix F.

Changes in the competitive environment in the oil industry were caused by the fluctuation of oil price and demand that increased environmental concerns and modified Government policies. Oil cannot set its own oil price because the price in Thailand is based on the average price of the Singapore market which is based on the global oil price (Section 7.3.1). OPEC and major oil importers play an important role in setting the oil price. The Economic conditions, political conflict and natural disasters of OPEC countries affect the oil price in Thailand. Moreover, the domestic oil price is affected by economic, political conditions and natural disasters inside Thailand. The Thai Government attempts to protect the Kingdom from an oil crisis by controlling the retail oil price through the Oil Fund and encourages business and households to use alternative energies. Moreover, the continually increasing oil price leads to an increase in the cost of raw materials; however, Oil cannot control this cost. Thus, the need for an effective cost management technique in controlling operational costs and environmentally friendly technology became Oil’s main organisational strategy. Oil adopted ABB mainly for planning, controlling and minimising its operation costs. Oil also promoted itself as a green energy provider by implementing ISO 14001 and ECA,
installing green production technology, biodiesel production and conducting research into alternative energies.

**Figure 7-5: Factors influencing the process of ABB implementation by Oil**

In summary, at the **initiation and adoption stage**, the competitive environment, particularly the variation in the oil price, Government policies, oil production technology and organisational strategy were the main factors influencing the use of ABB. At the **design and implementation stage**, organisational strategy, organisational structure, organisational culture and IT were the main factors driving the design and implementation of ABB. The budget was designed in co-operation with the cost
leadership strategy which was Oil’s main organisational strategy in reaching its expected EBITDA (Section 7.4.2).

Oil mainly has mechanistic structure which provides formal and centralised authority and hierarchical communication. The decision-making is conducted at the top level; employees strictly follow the decision made by top management. Mechanism influences the design and implementation of ABB in terms of assigning commands from top to low level to participate the budgeting preparation (Section 7.3.4, 7.4.2 and 7.4.3). At the same time, Oil uses organic structure as an informal communication between departments for budgeting preparation for the board of directors.

Moreover, organisational culture influenced the design and implementation of ABB (Section 7.4.2 and 7.4.3). Oil’s organisational culture has always been driven by the national culture as all employees are Thai. The Thai characteristic of amelioration has created an organisation culture that encourages employees to attain the Company’s goals by supporting each other and working as a team. Organisational culture is influenced by organisational strategy in human resource development focus (Section 7.3.5). Oil promoted its organisational culture as a helpful and learning organisation:

“Staff shall be virtuous, knowledgeable and helpful to others” (Oil Company’s website, 2012).

This statement leads to several human resource development programs which are available for employees. All employees are helpful and willing to share their knowledge that is perceived by researcher.

IT, such as SAP, e-library and e-learning, assists Oil to design and implement its ABB budget effectively (Section 7.4.3). As Interviewee 1-Oil noted, the importance of preparing an effective budget is the in-depth details of each activity related to business operations. IT applications could provide in-depth information for completing the ABB design and implementation.

At the application of information stage, ABB supported by IT, enables Oil to achieve its organisational strategies. ABB is used to minimise costs, particularly logistical and environmental costs, enhance decision-making and evaluate new projects to enhance its
competitive advantages (Section 7.4.4). IT enables Oil to use ABB comprehensively and effectively. Moreover, strong organisational culture encourages employees to use ABB in achieving corporate goals.

### 7.6 FACTORS RELATED TO THE ABB IMPLEMENTATION SUCCESS

The relationship between three contingency factors which are organisational strategy, IT and organisational culture enabled Oil to implementation of ABB successfully. These factors correlate with the seven success factors proposed by Shields and Young (1995). Moreover, Top management support was an important factor in the ABB implementation success.

Top management plays an important role in driving other success factors. In the initiation and adoption stage, Top management realised that the ABB system was the most suitable for Oil business, and then it attempted to implement ABB into its company. The clear objective of implementing ABB, which was the improvement of oil quality and competitive costing, was set and communicated to all staff.

In the design and implementation stage, Top management supports the Budgeting Manager and the Budgeting team to attend several seminars related to budgeting (Section 7.4.2) and provides sufficient IT resources (database, online learning centre and funds) to use ABB successfully. Furthermore, non-accounting ownership from Marketing and Production assists the Budgeting Department complete an accurate master budget. The helpful and learning organisational culture enables employees to assist each other and share knowledge in order to fulfil budget expectations (Section 7.3.5).

Moreover, Oil links the ABB system to performance evaluation and compensation. Oil uses ABB to set KPIs to evaluate whether each department is able to reach its goals and the overall corporate goals. Each department sets its goals to correspond with corporate goals (Section 7.4.2).
Only mechanistic **structure** could not help Oil to success the implementation of ABB, but organic structure does so. Oil used organic structure and bottom-up strategy to complete the ABB process. Oil challenged its employees to design activities that they wanted to do for the next financial year in order to reach indicated EBITDA. Employees worked together and enabled to decide what to do and communicated to others informally and quickly.

In summary, the presence of success factors assisted Oil in the implementation of ABB, especially top management support. A co-operative and ameliorating organisational culture enabled ABB to be successfully implemented.

### 7.7 SUMMARY

This chapter describes the history of an oil business in Thailand, its background, changes in contingency factors and the process of ABB implementation. Moreover, factors influencing the implementation of ABB by Oil, relationships between factors and those relevant to the success of the process are identified and explained in this chapter.

It was found that six contingency factors influence different stages of ABB implementation. Seven success factors together with cost leadership strategy, mechanistic and organic structures, helpful and learning culture and effective IT system are important to support the implementation of ABB.

The competitive environment shaped organisational strategy to focus on cost saving and concern about the adoption of ABB. The competitive environment was influenced by global oil situation, environmental concerns, Government policies and production technology. The design, implementation of ABB model corresponded with organisational strategy. IT, both management application software and the online learning centre, assists Oil to produce accurate budgets. Additionally, helpful and learning organisational culture, mechanistic and organic structure assists Oil to implement ABB without employee resistance. Employees from every department assist each other in the use of ABB to achieve corporate goals. Top management support is
important to the ABB implementation success by providing sufficient training courses, resources, clarifying ABB objectives, linking ABB to competitive strategy, and encouraging employees to complete ABB through performance evaluation and compensation.
CHAPTER EIGHT

DISCUSSION

8.1 INTRODUCTION

Chapter 5, 6 and 7 described the process of ABC implementation and identify factors that influence it. These factors were found in the three case studies of Telecom, Bank and Oil.

This chapter is a discussion of three case study findings that are presented in Chapter 5, 6 and 7. It compares the findings between cases by using cross-case analysis with the findings of other studies. This chapter focuses on three main discussions; the contingency factors that influenced each stage of ABC/ABB implementation (Section 8.2), the success factors (Section 8.3), and the outcomes that were influenced by different factors present in the case sites (Section 8.4). This section describes and discusses the features of ABC and ABB systems that were designed by the case sites, and the challenges of implementation in Thailand.

8.2 CONTINGENCY FACTORS INFLUENCING EACH STAGE OF ABC/ABB IMPLEMENTATION

In the following discussion, the main research question and sub-questions are addressed in turn. Six contingency factors were found to influence each stage of the ABC and ABB implementation process by the three companies. However, each factor played a different role in each case site and influenced other factors, as shown in Figure 8-1 and Table 8-1.
Factors influencing each stage of case site implementation are discussed and compared with other studies in the following sections.

**Figure 8-1: Factors influencing the process of ABC implementation by Thai companies**

Table 8-1: Factors influencing the process of ABC implementation by three Thai companies

<table>
<thead>
<tr>
<th>Topics</th>
<th>Telecom (ABC)</th>
<th>Bank (ABC)</th>
<th>Oil (ABB)</th>
</tr>
</thead>
</table>
| Factors influencing the initiation and adoption stage | - Competition is caused by Government policy and mobile technology.  
- Organisational strategy (differentiation) | - Competition is caused by Government policy and banking service technology.  
- Organisational strategy (differentiation) | - Competition is caused by global oil situation, environmental concerns, Government policy, and oil production technology. |
Factors influencing the design stage
- Organisational strategy
- Organisational structure (mechanistic and organic)
- Organisational culture (national culture and organisational strategy)
- Mobile technology and IT
- Organisational strategy
- Organisational structure (mechanistic and organic)
- Organisational culture (national culture and organisational strategy)
- IT
- Organisational strategy
- Organisational structure (mechanistic and organic)
- Organisational culture (national culture and organisational strategy)
- IT

Factors influencing the implementation stage
- Organisational structure (Organic)
- Organisational culture
- IT
- Organisational structure (Organic)
- Organisational culture
- IT
- Organisational structure (Organic)
- Organisational culture
- IT

Factors influencing the use of information stage
- Organisational strategy
- Organisational culture
- IT
- Organisational strategy
- Organisational culture
- IT
- Organisational strategy
- Organisational culture
- IT

8.2.1 Contingency Factors Influencing Each Stage of ABC Implementation

8.2.1.1 Initiation and Adoption of ABC (Research Question 1)

The literature (see Chapter 3 - Section 3.2.1), describes competition, government policy and technology as factors that influence the adoption of ABC. Portugal was the only country where government policy was found to directly influence the adoption of ABC (Hopper & Major, 2007). In developed countries, competition and technology are the most important factors in ABC adoption and it was developed due to changes in these sectors during the 1980s (see Chapter 2 - Section 2.2) (Cooper et al., 1985; Jones & Dugdale, 2002; Kaplan, 1984). Moreover, to stimulate competition, American Government policy was found to have indirectly influenced ABC adoption (Hobdy et al., 1994; Mays & Sweeney, 1994). In developing economies such as Malaysia, Thailand and Saudi Arabia, competition was found to have influenced firms to adopt
ABC but **organisational strategy** was not an influence in either developed and developing economies.

This study found that competition and organisational strategy were the main drivers behind the initiation and adoption of ABC in the three case sites and Government policy, production and service technology were indirect influences (see Figure 8-2). Subsequently, organisational strategy influenced changes in organisational structure, culture, existing technology (Porter, 2008), and costing systems (Chenhall & Langfield-Smith, 1998; Gosselin, 1997). ABC was included in organisational strategy to respond to changes in competition, technology and Government policy.

**Figure 8-2: Factors influencing the adoption of ABC by Thai companies**

**Competition** was important motivation for the initiation and adoption of ABC by Telecom and Bank. Consistent with the findings of research, companies that function in a highly competitive environment need more reliable cost information for strategic planning and effective decision-making (Anderson *et al.*, 2002; Arnaboldi & Lapsley, 2005; Cooper & Kaplan, 1988). Competition in Thailand, which was influenced by
economic, political, natural disaster, government policy, and production and service technology, shaped organisational strategy.

The main role of the Thai Government is to stimulate and control the competitive environment through laws, regulations and policies. In the 1990s, the Thai Government began to liberalise the telecommunications sector as part of its WTO responsibilities (Chapter 5 - Section 5.3.1) and in 1999, initiated similar with the banking sector due to its commitments to the World Bank (Chapter 6 - Section 6.3.2). These policies created new competitors and led to intense competition in the banking and telecommunications industries especially with regard to pricing competition.

Moreover, to increase the competitive environment, the Government enacted laws to control interconnection charges (Chapter 5 - Section 5.3.1) and maximum credit card fees payable (Chapter 6 - Section 6.3.4). These actions enabled companies to develop their corporate structures in readiness for a liberalised competitive environment. The Government did not intervene in a company’s selection of MAS.

In the telecommunications industry, the role of Government policy in Thailand was similar to that of the UK (Gwynne & Ashworth, 1993) and North America (Hobdy et al., 1994), but not similar to Portugal. As Portugal is a member of the European Union (EU), during the liberalisation process of the 1990s, its telecommunications companies were required to implement ABC for calculating the interconnection charges in line with EU regulations (Hopper & Major, 2007). Therefore, Government policy in Portugal directly influenced the initiation and adoption of ABC whereas Government policy in Thailand was an indirect factor in its initiation and adoption.

Moreover, in Thailand, the UK, (Cobb et al., 1995; Innes & Mitchell, 1997; Soin et al., 2002), America (Mays & Sweeney, 1994) and Portugal (Vieira & Hoskin, 2005), pressures in the competitive environment caused by changes to regulatory policies stimulated changes to the costing system of the banking sector.

**IT, production and service technology** became key competitive tools for many businesses in response to the rapid changes in competition (Porter, 2008). These technologies are continually developing and assist companies increase their competitive
potential. However, the development and installation of new technology leads to high capital investment hence accurate cost information is required for better investment decision-making.

Telecom needed to develop its network capacity in response to rapid changes in mobile technology and high demand for new services (see Chapter 5 - Section 5.3.2 and 6.3.3). Bank also needed to update to a new service with secure IT (see Chapter 5 - Section 6.3.4), therefore technology influenced both competition and the initiation and adoption of ABC.

The need for an effective costing system to provide accurate cost information for better decision-making corresponded with developments in the respective companies’ organisational strategy. Organisational strategy provides guidelines through which a company can achieve its business goals in response to changes in the external environment. Hence, organisational strategy influences changes in organisational structure, culture, existing technology (Porter, 2008) and costing systems (Chenhall & Langfield-Smith, 1998; Gosselin, 1997).

The findings revealed that Telecom and Bank focused mainly on differentiation strategy both in products and services due to high competition in their industries. Telecom encountered more intense pricing competition than Bank due to rapid changes in mobile technology and the liberalisation of the industry (Chapter 5 - Section 5.3.1, 5.3.2 and 5.3.3). In response to a pricing war and challenges to its leadership, Telecom believed that a long term pricing strategy was not appropriate (Section 5.3.4).

Moreover, intense competition in the banking industry was in response to the 1997 financial crisis (see Chapter 6 - Section 6.2), regulations enacted by the BOT and the Government (see Chapter 6 - Section 6.3.2), and high domestic consumption and investment demand (see Chapter 6 - Section 6.3.1). Subsequently, Telecom and Bank preferred to provide high quality products and services at acceptable price based on the cost condition of their customers.

ABC was selected at the time because it was able to provide accurate costing and price setting that was essential for achieving corporate strategy and business sustainability.
This finding supports Gosselin’s (1997) assertion that companies that use product differentiation strategy are likely to adopt ABM in preference to other systems. Thus, differentiation strategy encourages firms to adopt an effective costing system.

8.2.1.2 Design and Implementation of ABC Model (Research Question 2 and 3)

Competition, organisational strategy and structure were found to influence the design of the ABC model in developed economies (see Chapter 3 - Section 3.2.1 and Table 3-1). None of the studies in developing economies identified factors in the design stage. IT and organisational structure were found to influence the implementation of the ABC model in the UK and Canada whereas only organisational structure was found to be a factor in China’s case (see Chapter 3 - Section 3.2.1 and Table 3-1).

However, this study found that organisational strategy, organisational structure, organisational culture and IT influenced the design and implementation of the ABC model by Thai companies (see Figure 8-3)

**Figure 8-3: Factors influencing the design and implementation of ABC model by Thai companies**
Telecom and Bank designed their ABC models to set accurate cost information that would enable them to achieve their organisational strategies and respond to changes in market competition. As Telecom focused on product differentiation, its model was designed to identify costs per product for pricing and product mix decisions. The Call Centre needed to reduce costs and increase call services. The ABC model assigned costs generated by the Call Centre and was able to identify cost per call, evaluate call agent performance and identify areas in need of development.

Interviewee 2-Telecom said: “The Call Centre sets cost-saving as its main policy objective. It wants to know which activity consumes excessive costs, and then it will try to reduce them”.

Bank focused on the same strategy as Telecom. The Interviewee 3-Bank in the Bank gave an example of how business strategies influenced the design of the ABC model as follows:

“Bank wanted to develop another customer segment last year. The ABC team began this process by verifying the criteria of the new segment in order to set up the application to allocate its costs”.

Moreover, the findings indicated that organisational strategy subsequently influenced changes in organisational structure, culture and technology that are ready to implement and translate ABC into action. The findings support Porter’s (2008) assertion which describes the roles played by organisational strategy in developing organisational components. Therefore, organisational strategy, organisational structure, organisational culture and IT influenced both the design and implementation of the ABC model.

After the Asian financial crisis of 1997, organisational strategy was used as a guideline to achieve Bank’s goals of reaching international standards of competition. In 2000, Bank developed its organisational structure, workplace culture and technology (see Chapter 6 - Section 6.3.3) and in the same year implemented ABC but the system was not used due to lack of commitment. At the time, Bank was committed to implementing other systems such as organisational structure and IT.
In 2007, Bank began to implement ABC again and completed the process within three years as organisational stability had been restored. In comparison, Telecom started to implement ABC in 2000 and completed the process in 2007. Information was ready to use in that year because the implementation ran paralleled with the development of the mobile network and IT system (see Chapter 5 - Section 5.4.2). Subsequently, Telecom needed to revise its ABC model due to changes in technology. These changes included mobile technology and software that Telecom needed to be installed and, consistent with the findings (Bruggeman & Slagmulder, 1995), the installation of new production technology affected cost structure.

During the ABC design and implementation process by Telecom and Bank, the need for participation and involvement from employees from each department was required. Telecom and Bank believed that employees who control their work know the scope and scale of tasks they perform (the bottom-up strategy). This study found that mechanistic and organic structures were important for active employee in the ABC project. However, most studies in the Western countries state that only the mechanistic structure significantly influences the implementation process of ABC (Anderson, 1995; Gosselin, 1997; Kallunki & Silvola, 2008).

Telecom and Bank have a mechanistic style of organisational structures (see Chapter 5 - Section 5.3.5 and see Chapter 6 – Section 6.3.5). Both have hierarchical structures and a high level of centralisation and formalisation of communication (Donaldson, 2005). Top management used a top-down strategy to communicate the ABC project to lower levels through departmental managers and employees participated as a general responsibility. The hierarchical command and communication structure helped to diffuse ABC concepts effectively across the organisation (Liu & Pan, 2007). Therefore, a mechanistic structure encouraged high participation from employees for its design and implementation.

The organic structure was used during the design and implementation process as rapid communication was needed between the ABC team and other departments. The organic structure is effective for specific functions that require flexible procedures and communication (Donaldson, 2005). Although the mechanistic structure could increase
employee participation, the organic structure enabled a faster implementation process. Therefore, the implementation of ABC needs both the mechanistic and organic structure. Moreover, the use of the top-down and bottom-up strategy during the process by Telecom and Bank resulted in a higher probability of success (Shields & Young, 1989).

The study found a further two important factors relating to the extent organisational structure influences the implementation of ABC. Firstly, the integrated form of organisational structure in Telecom’s case site contributed to its effective implementation as structural integration incorporated departments for the purpose of achieving the organisation’s objectives (Lawrence & Lorsch, 1967). Telecom established an ABC team that included staff from Accounting, Marketing, Engineering, IT and other relevant departments to decide the process of implementation. The Budgeting and Cost Analysis Department was instrumental in improving communications between Accounting and Engineering. This co-operation between staff with expertise and experience not only enabled Telecom to respond to a competitive environment but also supported the implementation of ABC.

Secondly, the position of the ABC team in the organisational hierarchy was important for the implementation of the system. Bank established a specialised unit responsible for implementing and maintaining the ABC system. This unit had sufficient authority to communicate, assign tasks and train all employees about the implementation whereas, the ABC team at Telecom was a small group of employees from relevant departments who worked together as an extra responsibility without increased remuneration. As a result, Telecom had a longer ABC implementation journey than Bank.

Another factor influencing the design and implementation stage is organisational culture. This study found that a strong organisational culture that focuses on teamwork and performance and aligned with company goals, contributes to the successful implementation of ABC. Teamwork contributes to innovation and facilitates the implementation with less resistance (Chongruksut, 2009). In Thai companies, this style of organisational culture combines elements of national cultural characteristics (see Chapter 2 – Section 2.6) with human resource development programs as part of organisational strategy. To encourage creativity and innovation, Telecom and Bank
organised human resource development programs to develop employee attitudes, behaviours and competencies for increasing benefit to the company (see Chapter 5 - Section 5.3.6 and Chapter 6 - Section 6.3.6).

Telecom’s human resource development programs were developed to correspond to its organisational strategies to increase staff effectiveness based on the CSR concept. Employees develop competencies and are motivated to work for the increasing benefit of the company and that in turn, creates an effective organisational culture. Telecom’s work norm is described in its ‘FAST MOVING’ Policy (see Chapter 5 - Section 5.3.6). Bank has attempted to develop its employees in a manner similar by implementing several personnel management strategies, training in sales, service, credit underwriting, risk management, leadership, management and administration to improve the quality of teamwork management and organisational development. Bank promoted a performance-based corporate culture by implementing the PRO project, training programs and remuneration strategies in order to develop employee competency and performance (see Chapter 6 - Section 6.3.6).

As Telecom and Bank are Thai owned companies and most employees are Thai, it was not difficult to develop employees’ attitudes and behaviours (see Chapter 2 – Section 2.6). Thai values encourage both flexibility and pragmatism in the acceptance of innovative and logical ideas (Komin, 1990). As a result, employees adjusted their behaviours to suit the new environment and were able to implement ABC with minimal conflict. Moreover, centralised leadership which is a structural part of the collectivist, high power distance and high uncertainty avoidance characteristics of Thai culture identified by Hofstede (2007), describes Thais as preferring to follow their managers thereby reducing uncertainty (Komin, 1990; Pimpa, 2012; Sriussadaporn-Charoenngam & Jablin, 1999). Sriussadaporn-Charoenngam and Jablin (1999) assert that the relationship between management and staff in Thai organisations is closer and more paternalistic than in Western organisations. Thai employees work to complete the task assigned by their manager and expect rewards in terms of promotion, personal assistance and other incentives however, these characteristics could inhibit the development of creative and innovative ideas that have the potential to enhance organisations.
Due to its strong organisational culture, Telecom was able to complete the implementation of ABC without providing compensation, rewards or encountering major resistance as was experienced by its Portuguese equivalent. Major and Hopper (2005) claim that the resistance in the Portuguese telecommunications company occurred because the ABC project was not linked to rewards or performance evaluation. This was due to the different organisational culture and management styles which were in turn, influenced by the national character of the Portuguese and Thai workplaces Hofstede (2007). Western culture is highly individualistic; Westerners do not easily follow their managers if they believe it is not in their best interests (Hofstede, 2007).

The last factor which was found to influence the design and implementation of ABC was IT which is in line (Krumwiede, 1998) finding. As all corporate transactions were collected by the IT system, the ABC models in Telecom and Bank were designed around the information available in the existing IT system. If an item of information was not available in the system, Telecom assigned the IT department to develop specific software to collect the data it needed. As Bank outsourced to an IT company to manage its system, information was sent to the IT Company through the Data Warehouse.

This study claims that well-known Enterprise Resources Planning systems (ERP) such as SAP and Oracle provided accurate input information for the ABC system (Section 5.3.3 and 6.3.3). Moreover, this study found that costing software such as Oros and Oracle Cost Management supported the implementation of the ABC model. IT could reduce employee workload and deliver a prompt response to the rapid changes in market.

8.2.1.3 Use of ABC Information (Research Question 4)

Based on literature in (see Chapter 3 – Section 3.2.1), only two factors were found to affect the use of ABC information in developed countries and these were competition and organisational structure. A dynamic competitive environment and bureaucratic structure influences the use of ABC information differently across the organisational life cycle (Kallunki & Silvola, 2008) and this study found that organisational strategy, culture and IT influence the use of ABC information (see Figure 8-4).
Telecom and Bank use ABC information to respond to rapid changes in the external environment through the implementation of differentiation strategies. Moreover, *organisational strategy* provides companies with a means of responding to changes in the external environment. Previous studies in both developed and developing economies did not discuss the relationship between competition and organisational strategy that influences the use of the ABC system.

**Figure 8-4: Factors influencing the use of ABC information by Thai companies**

Telecom uses ABC information for pricing, planning, controlling costs and managing non-value added activities in order to increase its competitive advantage (see Chapter 5 - Section 5.3.4). It uses cost information to create new service packages and set its competitive price consistent with its cost/ benefit strategies (Goebel *et al.*, 1998). It uses ABC to evaluate new investment such as network and technologies (Cohen *et al.*, 2005; Swenson, 1995) and improve service and operational quality to meet customer requirements (Clarke *et al.*, 1999; Cohen *et al.*, 2005; Innes & Mitchell, 1995; Ittner, 1999). Before ABC was implemented, the Service Shop and Call Centre generated high cost activities due to inadequate human resource management but subsequently these non-value activities were reduced. Cost reduction was achieved through using advanced technologies to handle basic inquiries from customers and encouraging service shop...
staff to perform more complex tasks in order to increase the Company’s revenue. Furthermore, call agents not working at full capacity were deployed to receive calls to increase their productivity and the call rate.

The aims of implementing ABC by Bank were to acquire accurate information for monitoring costs, performance evaluation, pricing and selecting business alternatives to increase its competitive advantage. By 2009, Bank had been using the information from the ABC system for less than a year for internal monitoring rather than cost management (see Chapter 6 - Section 6.4.4). Bank uses cost information for evaluating the performance of products, pricing, identifying profit maximisation opportunities and customer satisfaction projects. All users of cost information are expected to reach corporate goals and are motivated by qualified and dedicated staff in a teamwork culture.

**Teamwork and innovative culture** provide employee opportunity for self-development that in turn enhances the company’s progress. Bank’s performance-based culture is evaluated through the ABC system and employees need to use it to develop their working skills and enhance their performance. However, conflict existed between departments due to doubts about the accuracy of the information staff received and this matter was resolved through robust organisational culture.

In Bank and Telecom, the ABC system was supported by IT systems and costing software to provide accurate cost information for better decision-making, facilitate a fast response to rapid changes in the external environment and reduce employee workload.

### 8.2.2 Contingency Factors Influencing Each Stage of ABB Implementation

Factors found to influence the implementation of ABB in developed economies are described in Chapter 3 - Section 3.2.2. None of the studies about ABB has been done in developing economies. In summary, it was found that competition and production technology influenced the initiation and adoption of ABB and organisational strategy was important to the design of the model. Moreover, organisational culture, structure and IT affected the implementation of ABB and organisational strategy influenced the
use of the information. Apart from Bahrain, there have not been any studies about ABB implementation in developing economies. This study found that more factors influenced each stage of the implementation process than those conducted on developed economies. The factors influencing the process of ABB implementation by Oil are shown in Chapter 7 - Figure 7-5, and discussed as follows.

8.2.2.1 Initiation and Adoption of ABB

This study found that competition, production technology, and organisational strategy influenced Oil’s adoption of ABB. Competition which was influenced by international conditions such as supply, demand, price, conflict, politics, government policy and oil production technology facilitated changes in organisational strategy. ABB was implemented to assist the Company achieve its objectives.

For the Thai Oil Company of the case study, competition was a determining factor in the implementation of ABB as it generated more accurate information for enhanced decision-making (see Chapter 7 - Section 7.3.1 and 7.4.1). Oil was in a similar situation as the Brewery Company in the UK studied by Liu et al. (2003) however, they did not describe the causes of market changeability and competition. This study found that the factors that determined the intensity of competition in the Thai oil industry were the international context combined with the Government’s oil policy and the development of oil production technology (see Chapter 7 - Section 7.5).

The challenges to Oil market included oil price, oil demand and environmental concerns (see Chapter 7 - Section 7.3.1). The domestic oil price is dependent on international markets and the Company cannot control the crude oil price and set its own selling price for finished oil products.

The high demand for international and domestic oil consumption led to an increase in the oil price. To respond to the fluctuations in the oil price, the Company needed effective management tools to control its costs and retain its profits. Moreover, competition between service stations and high environmental concerns stimulated the development of service station business and production technology.
Furthermore, the Thai **Government** plays an important role in increasing competition in the oil market and through oil production technology (see Chapter 7 - Section 7.3.2). It controls the domestic oil price through the Oil Fund and reflects the environmental concerns of the Thai population and industries through environmental regulations such as the prohibition of selling fuel oil with 3% sulfur in all industrial regions and the encouragement of alternative energy consumption. These concerns have increased the consumption of alternative energy sources and decreased the consumption of oil (see Chapter 7 – Section 7.3.2).

Consistent with the study by Block and Carr (1999), **production technology** was found to influence the adoption of ABB. They found that American Digital Semiconductor was forced by changes in production technology to implement ABB for better pricing decisions. Block and Carr's finding is slightly different from the findings of this study. Changes in oil production technology influenced Oil to adopt ABB for cost saving rather than pricing decisions as it cannot set its own price. ABB is used to evaluate new investment projects in order to construct effective and accurate planning decisions. Moreover, this study found that oil production technology was developed to increase refinery capacity and oil quality with reduced pollution output. These developments were in response to the high demand for oil, environmental concerns and Government policy (see Chapter 7 - Section 7.3.3).

Another factor that influenced the adoption of ABB was **organisational strategy**. Simon (1990) claimed companies that focus on differentiation **strategy** use budgeting for control more than companies that focus on cost leadership. Simon’s finding contrasts with those of this study. Oil focused on cost leadership to retain its EBITDA and ABB helped it to save costs. Moreover, ABB enabled Oil to differentiate and develop new products and services based on cost condition. Companies which compete on cost leadership need more sophisticated product costing than those that compete through differentiation (Porter, 1996).

### 8.2.2.2 Design and Implementation of ABB Model

This study found that not only organisational strategy influenced the design of the ABB model, but also organisational structure, culture and IT. Moreover, these three
contingency factors (organisational structure, culture and IT) were found to influence the implementation of the ABB model and this supports the results of studies from developed economies.

Brimson and Antos (1999) and Sandison et al. (2003) stated that the ABB model needed to be designed consistent with organisational strategy. The ABB model by Oil was designed based on organisational strategies that enabled the Company to reach the expected EBITDA (see Chapter 7 - Section 7.4.2).

Moreover, Bunce et al. (1995) states that firms which have mechanistic structures experience difficulty implementing ABB. However, the findings of this study claims that a mechanistic structure does not necessarily cause difficulties if it is used in a strategic manner. Due to the hierarchical and formal characteristics of its mechanistic structure, Oil communicated with employees about the ABB project from the beginning and encouraged their involvement (see Chapter 7 - Section 7.4.2). Subsequently, Oil used an organic structure and bottom-up strategy to design and implement its model. It devolved authority and communicated strategies its main organisational objectives to employees at all levels throughout the organisation (see Chapter 7 - Section 7.4.3). Therefore, both mechanistic and organic structures influence the design and implementation of the model.

Furthermore, Bunce et al. (1995) claimed that teamwork and a learning culture leads to effective budgeting. Consistent with Bunce et al.’s (1995) finding, Oil created an organisational culture predicated on helpfulness and learning that influenced the design and implementation of ABB (see Chapter 7 - Section 7.3.5 and 7.5). Oil’s culture was created by a combination of human resource development programs and national character and culture. To implement ABB, a high participation from employees and employees’ opinions are required.

Although Thais are helpful and supportive, they do not share opinions easily (Komin, 1990) and as a consequence of these behaviours, Thais prefer to follow their manager (Pimpa, 2012). Oil provides technical and operational training in planning, problem solving and risk management skills in order to encourage its employees’ confidence to express opinions (see Chapter 7 – Section 7.3.5). Thus, human resource development
programs play an important role in adapting behaviour to organisational culture. Thai employees are committed to helping the Company reach its goals effectively whereas Liu (2003), found in his UK research, employees tended to disregarded directions from top management and resisted the implementation of ABB if they were not in agreement. This could illustrate a weakness in organisational culture as employee behaviour and beliefs on this issue did not correspond with the company’s goals.

Mason (1996) found that specific cost control software provided a UK brewing company accurate ABB information in less time and with fewer costs which is similar to the finding of this study. An effective IT system, SAP, effectively supports the design and implementation of the ABB model however; Oil for example did not install any specialist cost control software.

8.2.2.3 Use of ABB Information

Organisational strategy was found to be the only influence in the use of ABB information (Block & Carr, 1999; Joshi et al., 2003). Oil uses ABB to deliver its cost leadership strategy by minimising costs, particularly logistical and environmental costs, enhancing decision-making, and evaluating new projects to increase its competitive advantage. Moreover, a helpful and learning organisational culture encourages employees to use ABB to achieve organisational goals. IT, both SAP and e-Library, provide accurate and timely information that enables employees to learn to use the system.

8.3 FACTORS CONTRIBUTING TO THE ABC/ABB IMPLEMENTATION SUCCESS

8.3.1 Factors Contributing to the Success of ABC Implementation

As the literature described in Chapter 3 - Section 3.3.1 and Table 3-2, the key success factors developed by Shields (1995) could assist companies in both developed and developing economies to implement ABC successfully. In developed economies, six success factors were found to influence the success of its implementation. There were
top management support, adequate internal resources, training and non-accounting ownership, linking ABC system to competitive strategy, performance evaluation and compensation. Consensus about and clarity of the objective of ABC was not found to influence the implementation success. Moreover, only studies in developed countries found that contingency factors, (organisational strategy, organisational structure, organisational culture and IT), influenced the success of implementation. In developing economies, top management support was the most important factor followed by consensus and clarity of objectives, training, linking the ABC system to competitive strategy, adequacy of internal resources and non-accounting ownership. The link of ABC system to performance evaluation and compensation was not found to be important to the implementation success.

In comparison, this study found that the seven success factors and the same contingency factors identified by Shields (1995), in developed economies, influenced ABC implementation success in Thai companies (see Figure 8-5). In line with other studies, top management played an important role in its successful implementation and drove several factors to that end. Moreover, this study found that the ABC team and external consultants contributed to its successful implementation. This study asserts that a combination of factors enabled companies to successfully implement ABC; however, different combinations of factors contributed to the success stories.

As shown in Table 8-2, the Telecom experience represented fewer factors. It had reduced top management support after the design stage, offered less training in designing, implementing and using the system, established vague linkages of the system to performance evaluation and compensation, provided inadequate resources, failed to establish a clear consensus about objectives at the beginning, increased the workload of the ABC team and sought less support from external consultants (see Chapter 5 - Section 5.6). Although the Telecom experience included fewer factors, strong organisational structure and culture enabled it to eventually complete the implementation and receive some benefits from its use. Telecom was unable to implement the full ABC system that meant not all costs were allocated based on activity (see Chapter 5 - Section 5.3.2). Telecom experienced more behavioural and technical
challenges than Bank (see Section 8.4.3); however, it intends to continue to develop its ABC system.

**Figure 8-5: Factors influencing the success of ABC implementation by Thai companies**

Bank was more successfully than Telecom in its implementation of ABC and had high expectation of achieving all success factors (see Chapter 6 - Section 6.6). Bank received full support from top management, internal resources, training in designing, implementing and using ABC, and participation from employees. Moreover, there was clear consensus about the objectives of the implementation as it was linked to competitive strategy (differentiation) and performance evaluation and compensation.

The ABC team was only responsible for completing the implementation and as this was a clearly defined objective, its effectiveness increased. External consultants also assisted the Company to reduce the difficulty of designing and implementing the ABC model. Furthermore, organisational structure and culture increased participation from employees that contributed to implementation success. As a consequence, Bank experienced less behavioural and technical difficulties (Section 8.4.3) and completed the implementation of ABC within three years.
Table 8-2: Factors influencing the ABC/ABB implementation success by three case studies

<table>
<thead>
<tr>
<th>Main factors</th>
<th>Sub Factors</th>
<th>Telecom</th>
<th>Bank</th>
<th>Oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Success factors proposed by Shields (1995)</td>
<td>Top management support</td>
<td>Less support after the design stage</td>
<td>Full support</td>
<td>Full support</td>
</tr>
<tr>
<td></td>
<td>Training in designing, implementing and using ABC</td>
<td>Training only about ABC concept</td>
<td>Full training for ABC team and other staff</td>
<td>Full training for budgeting staff and related staff</td>
</tr>
<tr>
<td></td>
<td>Link to performance evaluation and compensation</td>
<td>ABC system is linked to performance evaluation but not compensation</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Link to competitive strategies</td>
<td>ABC system is linked to differentiation strategy</td>
<td>ABC system is linked to differentiation strategy</td>
<td>ABB system is linked to cost leadership strategy</td>
</tr>
<tr>
<td></td>
<td>Consensus about and clarify of objective</td>
<td>Consensus about and clarify of objective of ABC implementation was not clear at the beginning.</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Adequacy of resources such as fund and IT</td>
<td>Partly</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Non-accounting ownership</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Contingency factors</td>
<td>Organisational strategy</td>
<td>Differentiation strategy</td>
<td>Differentiation strategy</td>
<td>Cost leadership strategy</td>
</tr>
<tr>
<td></td>
<td>Organisational structure</td>
<td>Mechanistic and organic, management team has been often changed</td>
<td>Mechanistic and organic</td>
<td>Mechanistic and organic</td>
</tr>
<tr>
<td></td>
<td>Organisational culture</td>
<td>Teamwork and innovation</td>
<td>Performance-based culture</td>
<td>Helpful and organisational learning</td>
</tr>
<tr>
<td></td>
<td>IT software used</td>
<td>SAP</td>
<td>Oracle</td>
<td>SAP</td>
</tr>
<tr>
<td>Other factors</td>
<td>ABC team</td>
<td>Employees from related departments who are still responsible for their general works</td>
<td>Employees from related departments who were assigned to be responsible for only ABC implementation</td>
<td>No ABC team</td>
</tr>
<tr>
<td></td>
<td>Role of external consultants</td>
<td>ABC model benchmark</td>
<td>Consultation in designing and implementing ABC</td>
<td>No external consultants involved</td>
</tr>
<tr>
<td>The features of ABC implementation</td>
<td>Telecom</td>
<td>Apply ABC concept into existing costing system</td>
<td>Full ABC</td>
<td>ABB</td>
</tr>
<tr>
<td></td>
<td>Bank</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Oil</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Implementation time</td>
<td>2001-2007</td>
<td>2006-2009</td>
<td>Since Oil was established</td>
</tr>
<tr>
<td></td>
<td>Costing software used</td>
<td>Oros and in-house software</td>
<td>Oracle Cost Management</td>
<td>-</td>
</tr>
</tbody>
</table>
8.3.2 Factors Contributing to the Success of ABB Implementation

As described in Chapter 3 - Section 3.3.2, none of the studies focused on identifying factors that influence the success of ABB implementation. Player (2004) suggested that the seven success factors that influence the implementation of ABC proposed by Shields (1995) could support the implementation of ABB. In the UK, training in the design, implementation and use of ABB (Friedman & Lyne, 1997), organic structure, and learning and teamwork culture (Bunce et al., 1995) were found to influence the success of an ABB implementation.

However, this study found that seven success factors as Player (2004) suggested influenced the success of ABB implementation (see Table 8-2). Moreover, organisational factors including organisational strategy, organisational structure (both mechanism and organism), organisational culture and the IT system were important contributors to ABB implementation success. This is in line with the findings by Friedman and Lyne (1997), Bunce et al. (1995) and Mason (1996). In contrast however, the ABC team and external consultants were not integral to Oil’s implementation of ABB.

Top management support was a vital factor leading to the successful implementation of ABB by Oil and drove other success factors to that end (see Chapter 6 - Section 6.6). Top management had clear objectives about ABB’s implementation; it was to link its cost leadership strategy to competition, performance evaluation and compensation. Player (2004) found that a mechanistic structure plays an important role in the dissemination of the objectives of ABB and organisational strategy across the company and increases participation from employees. High participation from employees is required for the implementation of ABB.

Alternatively, Bunce et al. (1995) found that the organic structure creates informal communication channels between departments that are useful for preparing budgets. The budgeting staff and other relevant staff were trained in the ABB system through seminars provided by consultants and the in-house e-Library. A helpful organisational learning culture, strong organisational structure and an effective IT system such as SAP resulted in a systematic and effective ABB system.
8.4 THE OUTCOME OF ABC/ABB IMPLEMENTATION INFLUENCED BY DIFFERENT FACTORS

The same contingency factors were present in the case studies of the three companies of this study and moreover, they shared the same success factors. However, a different combination of factors resulted in the ABC and ABB models that have diverse features. This section compares the outcomes of ABC/ABB implementation and examines the extent the influencing factors were similar or different from the traditional ABC and ABB system described by Cooper and Kaplan (1987, 1988) and Johnson and Kaplan (1987). In the following sections, the features of ABC and ABB models are discussed.

8.4.1 The Features of ABC Model after Completing the Implementation

As described in Chapter 2 - Section 2.2.2, the traditional ABC system includes two stages of cost allocation. During the first stage, indirect costs are assigned to activities based on resource cost drivers and during the second stage, the costs of each activity are assigned to cost objects based on activity cost drivers (see Chapter 2 - Figure 2-1).

Telecom had fewer contingency and success factors and these are discussed in previous sections. Due to less support from external consultant, less training in designing, implementing and using ABC, unclear objectives of ABC implementation, and inadequate resources needed for implementing ABC; Telecom was unable to implement a full ABC system. As a result, the ABC system designed by Telecom was complicated, unsystematic and different from the traditional system (see Chapter 5 - Section 5.4.2 and Figure 5-4, 5-5 and 5-6), as follows.

- The cost allocation was based on departments not core business activities and this lead to unclear identification of activity (see Chapter 5 - Figure 5-4, 5-5 and 5-6).

- Some easily identifiable indirect costs were allocated directly to activities without using resource drivers. They were initially identified when transactions were keyed into the IT system. Thus, the cost allocation process started from
assigning indirect costs directly to related activities and the cost of activities were allocated based on cost drivers to cost objects (see Chapter 5 - Figure 5-5).

- Some indirect costs were not assigned to activities. Instead, they were assigned directly to cost objects (see Chapter 5 - Figure 5-6) such as the costs of the IT system. The costs were created by specific cost objects, for example the costs of the billing system was assigned directly to billing services (cost object), because only billing services used this system.

- Costs of back office, such as Accounting, Finance and QA that could be assigned to other departments, were assigned to in-house services (cost objects). The costs of in-house services were not assigned to other cost objects as it was a small amount, fixed and insignificant for marketing decision-making (see Chapter 5 - Figure 5-6).

- The ABC system had double cost allocation stages as costs of service departments were initially assigned to user departments. Consequently, those costs were assigned to cost objects (see Chapter 5 - Figure 5-6).

Moreover, due to the complexity of mobile technology and network, Telecom was unable to identify the most suitable cost drivers as the ABC team expected for cost allocation. The changes in working process of the Call Centre also led to the adjustment of cost structure of the Call Centre (see Chapter 5 - Figure 5-5). In the past, each Call Centre team was responsible for receiving calls which were related to its team. Later on, Telecom found out that the Call Centre had unused capacity in this working process. Then, all Call Centre teams were asked to help other teams to receive calls when it had free time. As a result, the total cost of each team after changing working process needed to include inter-charge costs when it asked other teams for assistance.

In comparison, Bank was able to implement a complete ABC system across its organisation due to the presence of contingency and success factors. External consultants, full training in designing, implementing and using ABC for ABC team and relevant staff, and the adequacy of resources contributed to the design and
implementation of the model that was systematic and had a clear cost structure (see Chapter - Section 6.4.2 and Figure 6-3).

The ABC system designed by Bank expanded the remit of the traditional ABC system in corporations due to the large amount of activities and daily transactions it processed. All main activities of Bank are grouped into two processes known as Core and Sustain. The main business activities are grouped under Core and classified into several sub-activities. Costs of service departments are grouped into Sustain and assigned to Core processes and activities. The identification of activities by Bank is not based on department, as they are by Telecom.

Moreover, it was found that Bank adopted the TDABC concept for calculating cost drivers as some cost drivers that Bank used to allocate costs were based on time that staff performs each activity. At the beginning, Bank attempted to collect actual time that each staff performs transactions using observation following the traditional ABC procedure. Bank found out that this method was difficult in practice and staff objected to being observed, as Interviewee 4-Bank described:

“It was suggested at the meeting that we hired someone to monitor the time it took for staff to perform transactions at the branch level. However, the cost of this activity would out way the benefit. It was hilarious that one of our managers would come up with such a ridiculous idea. It is difficult in practice. Moreover, staff objected to being observed so we discontinued that practice.”

Subsequently, Bank found the solution to use time standard as a cost driver instead of using actual time from observation, as Interviewee 4-Bank explained:

“Top management required a meeting with branches and product managers to discuss cost drivers. Last year, top management required a meeting with branches and product managers to discuss cost drivers. They reach the consensus about the number of the cost drivers for deposits and selling insurance. The cost driver per deposit is 2 minutes and the cost driver per insurance is 1 hour.”

However, Bank did not know that the use of time standard as a cost driver was called TDABC.
8.4.2 The Features of ABB Model after Completing the ABB Implementation

As shown in Figure 8-6, the ABB information flow designed by Oil is slightly different from the traditional information flow proposed by Cokin (2012), and presented in Chapter 2 - Section 2.2.3.2.

Figure 8-6: The ABB information flow designed by Oil

The traditional ABB information flow starts analysing activity and resource needs based on cost object demand (requirement analysis), proceeds to analyse organisational capacity (capacity analysis), and concludes with determining costs and evaluating profitability of cost objects (cost analysis) (see Chapter 2 - Figure 2-3). However, the information flow that was designed by Oil starts with the setting of expected profitability that is the last step of the traditional ABB information flow (see Figure 8-6 and Chapter 7 – Section 7.4.2). Oil’s top management set expected EBITDA (or expected profitability) in responding to cost leadership strategy and consequentially, the Refinery and Marketing business reached a consensus about the requirement of oil production by using capacity analysis. Subsequently, each business analyses its activity and resource requirements concurrent with its activity and resource costs in order to
reach the expected EBITDA. In order to meet the effectiveness of capacity, activity, and cost analysis, the ABB team and all relevant staff received full support from Top management in training about ABB concept and providing sufficient resources.

8.4.3 The Challenges of ABC/ABB Implementation Experienced by Three Cases

The effects of contingency and success factors on the implementation of ABC in the three case sites resulted in behavioural and technical difficulties.

8.4.3.1 Behavioural Difficulties

- **Decreased employee participation**
  At the beginning of Telecom’s design stage, there was less participation from employees due to unclear objectives of the implementation and lack of communication about the project. Top management formalised the status of the ABC team and communicated to relevant employees about the project through its hierarchical structure. High participation resulted.

- **Decreased Top management support**
  Telecom experienced less Top management support and attention to the ABC project after the implementation stage due to the frequency of changes in management structure. As a result, the ABC implementation process stopped for a period of time.

- **Dissatisfaction of the ABC team**
  The dissatisfaction experienced by the ABC team at Telecom was the result of unclear patterns of performance evaluation. The team had an increased workload but did not receive any extra compensation or rewards. This led to the slow progress of the implementation process. Strong organisational culture can solve this problem.

- **Dissatisfaction among some employees**
  During the design and implementation stages of ABC by Bank, conflict occurred between departments about the system model because employees were concerned about their performance evaluation. Clear and reasonable explanations and strong organisational culture enabled Bank to deal effectively with this issue.
• **Knowledge of employees**

For implementing ABB, the most important issue for Oil was the knowledge and experience of employees who prepared budgets. Moreover, Oil believed that employees with expertise are able to prepare effective budgets with minimal discrepancies.

**8.4.3.2 Technical Difficulties**

• **Limitations of the IT system**

IT is a key element that can assist companies to store a large amount of business information and respond quickly to changes in the external environment. IT plays an important role in the implementation of ABC. During the implementation by Bank, the team found that some data had not been stored in the data warehouse. This oversight became apparent due to improvements in the IT system and it increased the team’s workload during implementation. Moreover, Telecom faced the limitations of its costing software and IT systems that were unable to collect some specialised information. Telecom designed in-house software to support those systems.

Furthermore, both Telecom and Bank experienced the technological difficulties that are related to computers, software applications and IT systems. Telecom and Bank needed to ensure the software ran without errors by testing the costing models and confirming the output with relevant staff.

• **The difficulty of activity and cost driver identification**

The complexity of the business processes, production and service technologies, and the variety of products and services caused difficulty in identifying activities and cost drivers. Telecom experienced the most difficulty in activity and cost driver identification due to the complexity of its mobile networks. It was difficult for Telecom to implement a full ABC system due to the expense in terms of financial, time and HR. To identify the most suitable cost drivers, Telecom needed high investment for collecting specific data.
8.5 SUMMARY

This chapter discussed the findings described in Chapter 5, 6 and 7 and compares them with findings of other studies. Those findings were subsequently compared with those of the three case sites. The discussions provide better understanding of the contribution this study makes to the development of contingency theory and management accounting studies in developed and developing economies.

Moreover, this chapter discusses three main findings in line with the research questions. These findings are about the contingency factors that influence each stage of ABC/ABB implementation, the factors relevant to implementation success and the outcomes that are influenced by those factors. This study found that six contingency factors influenced each stage of the ABC and ABB implementation process by the three companies. The same factors influenced each stage of the ABC implementation process in the three companies. However, each factor played a different role in each case site and each factor influenced other factors. Moreover, this study found that the seven success factors proposed by Shields (1995) were the same factors that were identified by studies of developed economies and influenced the success of ABC implementation in Thai companies.

This study asserts that the combination of factors enabled companies to successfully implement ABC however, a different combination of factors contributed to the success stories. Due to the reduced number of contingency factors in the Telecom context, the company was unable to implement a complete ABC system. Its system can allocate only some indirect costs and is not systematically constructed.

Bank was the most successful in the implementation of ABC as all the success factors were present during the process and it was completed was within three years. Oil successfully implemented ABB and was satisfied with the system’s cost-saving ability. An ABC team and external consultants were not important to Oil’s implementation of ABB.
CHAPTER NINE

CONCLUSION, CONTRIBUTIONS, LIMITATIONS AND FURTHER RESEARCH

9.1 INTRODUCTION

Chapters 5, 6, 7 and 8 discussed the three case study findings that are presented in this thesis. It compared the findings between cases by using cross-case analysis with the findings of other studies. This research was set out to qualitatively explore contingency factors that influence varying stages of ABC/ABB implementation. Drawing on three Thai case companies as representatives of companies in developing economies, this research explored the differences that played out throughout adoption, design, implementation and use of the ABC/ABB system in developing versus developed countries. Case analysis at telecommunications, banking and oil companies provided in-depth analysis of the following contingency factors. This case study research also includes an examination of success factors proposed by Shields (1995) previously applied in developed countries such as the US and UK. The empirical results and findings in relation to the three case sites are summarised as follows:

- All contingency factors play different roles in each stage of the ABC/ABB implementation process.

- To successfully implement ABC/ABB, all success factors and organisational factors need full attention.

- A different combination of factors provides different success stories in each company.
There was a difference in the empirical findings in developing economies versus the existing literature which largely contributes to contingency theory and ABC/ABB in developed countries.

This chapter provides further examination of the findings and how they might contribute to further research. The structure of the chapter is as follows. In Section 9.2, the contributions of this research are discussed in detail. The findings are linked back to the original motivation of this study, with justification of the research objectives and research methodology. In Section 9.3, the main findings of the study are unpacked and discussed holistically. The chapter concludes with discussion of research implications (Section 9.4), as well as further limitations associated with case research (Section 9.5). Recommendations for further research are provided in Section 9.6.

### 9.2 RESEARCH CONTRIBUTIONS

This research contributes to contingency theory and accounting practice as well as offering technical contributions to the management accounting literature on ABC/ABB adaptations in practice.

As highlighted in Chapter 2 Literature Review, there is a lack of detailed explanation on the role of contingency factors in management accounting system use, in particular over the four stages of ABC/ABB implementation. The contingency factors explored in this thesis include competition, government policy, technology, organisational strategy, organisational structure and organisational culture. These four stages comprise of (1) initiation and adoption, (2) design, (3) implementation and (4) use of information. The literature review highlights a lack of understanding of the interrelationships between the factors. They have largely been unexplored or ignored as most prior studies are quantitative, survey-based and lack detailed understanding. Finally, research comparing contingency factors in developing versus developed countries is minimal.

This research thereby contributes with qualitative methods to provide:
• an in-depth understanding of how different contingency factors influence the four stages of ABC/ABB implementation;
• the role of contingency factors and the interrelationships between contingency factors in developing economies;
• an examination of management accounting success factors in developing economies; and
• practical examples of adaptations to ABC/ABB techniques in practice.

This research contributes to theory through the qualitative investigation of contingency factors. This research has provided an in-depth understanding of how different contingency factors influence the four stage process of ABC/ABB implementation in developing economies. It was proposed in Chapter 3 - Section 3.2 that six contingency factors might influence each stage of ABC/ABB implementation.

The research contributes to theory and practice through the examination of success factors proposed by Shields (1995). It was argued in Chapter 3 - Section 3.3 that six contingency factors and seven success factors might influence the implementation success.

As highlighted, little is known about ABC/ABB adoption and implementation in developing economies due to the small number of studies. This work contributes to Hopper et al.’s (2009) call for more management accounting literature that considers developing economies. Thailand was selected as a representative of a developing economy because of its cultural attributes as well as its emerging socio-political environment (Hofstede, 1984, 2007).

This research compared the identified contingency factors with empirical evidence found in this study with contingency factors found in other studies in developed countries and found that contingency factors play differently on the implementation of ABC/ABB in developing and developed countries.

The literature on ABC/ABB research area is largely qualitative in nature and there is a lack of a detailed explanation of the ABC/ABB implementation process. The use of a qualitative approach in this research provides a deeper understanding and contributes to
the quantitative findings. A qualitative approach is arguably an appropriate research methodology for exploring in-depth accounting practices in organisations (see Humphrey & Scapens, 1996; Kaplan, 1986; Llewellyn, 2003; Lukka & Kasanen, 1995; Parker, 2012; Scapens, 1990). Detailed descriptions were provided using narrative analysis (Llewellyn, 2003).

The use of a qualitative approach in this study has also contributed to the investigation of the ABC/ABB model, whether it has been designed and implemented following the ABC traditions developed by Cooper and Kaplan (1987, 1988) and Johnson and Kaplan (1987). Since the introduction of ABC in 1987, the traditional ABC has been further developed to assist budgeting (ABB) and to encourage the use of ABC information (ABM). A more recent ABC method, known as TDABC, has been developed to reduce the difficulties of implementing the traditional ABC. Nevertheless, exploration of this new ABC model has rarely been undertaken by prior studies. This research presents the actual ABC models which have been developed and adapted at each case site.

The following sections highlight the findings and comparisons between all three case sites.

9.3 CONCLUSION OF FINDINGS IN THE THREE COMPANIES

This research identifies three main research findings. These are the contingency factors influencing the process of ABC/ABB implementation, contingency factors in developing versus developed countries, and the features of ABC/ABB models which were caused by the identified factors.

9.3.1 Contingency Factors Influencing the ABC/ABB Implementation Process

To answer the overarching research question 1 “Do the same contingency factors hold throughout the varying stages of ABC/ABB implementation?”, this research found that six contingency factors were found to influence each stage of the ABC/ABB implementation by the three companies (see Chapter 8 – Table 8-1). Each factor played a different role in each stage and each factor also influenced other factors. Moreover, all
three companies experienced similar contingency factors but different sub-factors in implementing ABC/ABB because they are operating in different industries, as shown in Table 9-1.

**Factors influencing the initiation and adoption stage (Research Question 1)**

It was found that competition and organisational strategy were the main drivers behind the initiation and adoption of ABC/ABB. In line with the literature, companies which are in a highly competitive position need more reliable cost information for strategic planning and improved decision-making.

All three companies experienced high competition which was influenced by economic, political, natural disaster (such as floods), government policy, and emerging production and service technology. The government plays the main role in stimulating and controlling the competitive environment in Thailand through various laws, regulations and policies. The development of existing technology and adoption of new technology in response to the rapid changes in market competition leads to high capital investment. Hence, accurate cost information is required for strategic planning and better investment decision-making for organisational and business development.

As shown in Table 9-1, Telecom faced the most intense market competition which was caused by the liberalisation in the telecommunications industry and the rapid changes in mobile technology (such as Digital GSM, WAP, GPRS, EDGE and 3G technologies). Due to an increasing number of competitors and the pricing war, Telecom as a market leader (60% of market share in 2001) needed to focus on differentiation strategy in the quality of its networks and services to maintain its positive market share. In achieving these strategies, ABC was selected as an effective costing technique, which could provide accurate cost information for sustainable and better business decision-making. This led to the adoption of ABC in 2001.
Table 9-1: Contingency factors influencing the ABC/ABB implementation process by three Thai companies

<table>
<thead>
<tr>
<th>Stages of ABC/ABB implementation</th>
<th>Factors</th>
<th>Telecom (ABC)</th>
<th>Bank (ABC)</th>
<th>Oil (ABB)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initiation and adoption</strong></td>
<td>1. <em>Competition is caused by Government policy and technology</em></td>
<td>High competition is caused by the liberalisation in telecommunications and policies related to the telecommunications industry from the Government and changes in mobile technology.</td>
<td>High competition is caused by the Asian financial crisis in 1997, economic stimulus and monetary policies from the BOT and the Minister of Finance and banking service technology.</td>
<td>High competition is caused by oil price, environmental concerns, environmental and energy policies from the Government and changes in oil production technology.</td>
</tr>
<tr>
<td></td>
<td>2. <em>Organisational strategy</em></td>
<td>Differentiation</td>
<td>Differentiation</td>
<td>Cost leadership</td>
</tr>
<tr>
<td><strong>Design</strong></td>
<td>1. <em>Organisational strategy</em></td>
<td>Differentiation</td>
<td>Differentiation</td>
<td>Cost leadership</td>
</tr>
<tr>
<td></td>
<td>2. <em>Organisational structure</em></td>
<td>Mechanism, organism and integration</td>
<td>Mechanism and organism</td>
<td>Mechanism and organism</td>
</tr>
<tr>
<td></td>
<td>3. <em>Organisational culture</em></td>
<td>Teamwork and innovative culture is built by national culture and human resource development programs</td>
<td>Performance-based culture is built by national culture and human resource development programs</td>
<td>Helpful and organisational learning culture is built by national culture and human resource development programs</td>
</tr>
<tr>
<td></td>
<td>4. <em>Technology</em></td>
<td>Mobile technology and SAP</td>
<td>Oracle and data warehouse</td>
<td>SAP</td>
</tr>
<tr>
<td><strong>Implementation</strong></td>
<td>1. <em>Organisational structure</em></td>
<td>Organism</td>
<td>Organism</td>
<td>Organism</td>
</tr>
<tr>
<td></td>
<td>2. <em>Organisational culture</em></td>
<td>Teamwork and innovation</td>
<td>Performance-based culture</td>
<td>Helpful and organisational learning culture</td>
</tr>
<tr>
<td></td>
<td>3. <em>IT</em></td>
<td>SAP, Oros and in-house software</td>
<td>Oracle, data warehouse and Oracle costing software</td>
<td>SAP</td>
</tr>
<tr>
<td><strong>Use of information</strong></td>
<td>1. <em>Organisational strategy</em></td>
<td>Differentiation</td>
<td>Differentiation</td>
<td>Cost leadership</td>
</tr>
<tr>
<td></td>
<td>2. <em>Organisational culture</em></td>
<td>Teamwork and innovation</td>
<td>Performance-based culture</td>
<td>Helpful and organisational learning culture</td>
</tr>
<tr>
<td></td>
<td>3. <em>IT</em></td>
<td>Oros</td>
<td>Oracle costing software</td>
<td>SAP</td>
</tr>
</tbody>
</table>
This is similar to the case of **Bank**. Bank is the first company which adopted ABC among the three case sites. In 2000, Bank reshaped its organisational strategies in order to develop all business units, including the implementation of ABC as a result of the effect of the Asian financial crisis in 1997. However, the ABC system was not continually used as Bank paid more attention to developing other management techniques, such as Valued-based Management, PA system and PRO project, rather than continuing to use the ABC system. After the Asian financial crisis, Bank faced high market competition in the banking sector, which was caused by the economic stimulus and monetary policies of the Thai Government and the changes in banking service technology. Increasing competition, which raised Bank’s operational costs and reduced Bank’s income, led Bank to focus on increasing competitive environment and income generation as its organisational strategy and implement ABC again in 2007.

Although Telecom and Bank experienced similar levels of competition, Telecom experienced more intense market competition than Bank in 2002. Moreover, the competition that Telecom faced was influenced equally by both the Thai Government’s actions and emerging new technology; while the market competition that Bank faced was influenced by more Thai Government’s actions than technology.

**Oil** had a competitive market situation very similar to Bank and Telecom, but from different influences. The competition that Oil experienced was caused by the variation in global oil prices, environmental and energy saving policies, and the development of global oil production technology. Oil cannot set its own price because the oil price in Thailand is based on the average price of the Singapore market. Moreover, the quality standards of oil production in Thailand are slightly different. Therefore, Oil focused mainly on a cost leadership strategy. Oil adopted ABB mainly to plan, control and minimise its operating costs.

In summary, the empirical evidence of this study reveals that companies which focused mainly on a differentiation strategy both in products and services adopted ABC; while, companies which focused primarily on cost leadership adopted ABB.
**Factors influencing the design and implementation stages** (Research Questions 2 and 3)

It was found, in all three cases that organisational strategy influenced the design of the ABC/ABB model, and that organisational structure, culture and IT played a large role in the design and implementation stages.

At the design stage, the three companies designed the ABC/ABB model in corporate with their organisational strategy. The ABC/ABB systems were designed to provide enough information to support business decision-making for achieving its organisational strategy. In addition, organisational strategy influenced many changes to organisational structure, organisational culture and existing technology to be ready for implementation and to translate ABC into effective actions, as can be seen with the case of Bank.

After the Asian financial crisis of 1997, Bank’s organisational strategy was used as a guideline to reach the company’s goals, and in 2000 this led to the development of organisational structure, culture and existing technology. In the same year, Bank implemented ABC; however, it was not used due to outstanding developments. In 2007, Bank began to implement ABC again and completed the process within three years as organisational stability had been achieved. In comparison, Telecom had started to implement ABC in 2000 and completed the process in 2007; the information was ready to use that year because the implementation of ABC was paralleled to the development of mobile network and IT systems. Subsequently, Telecom needed to revise its ABC model as changes occurred in technology. Oil, which implemented ABB, designed the budget information flow in co-operation with its organisational strategy, which was cost leadership in reaching its expected EBITDA.

During the design and implementation process, high participation and involvement from employees from each department were required because they were responsible for their work and knew the scope and scale of their tasks (the bottom-up strategy). In the three companies, the mechanistic structure could achieve high participation from employees before the design of the ABC/ABB model. The top management of the three companies used top-down strategy to communicate the ABC/ABB project to lower
levels through the managers of each department and employees participated in the ABC/ABB project as a general responsibility. The hierarchical command and communication structure helped to diffuse ABC concepts effectively across the organisation (Liu & Pan, 2007). The organic structure was used during the design and implementation stage as it needed fast communication between the ABC team and other departments. The organic structure is effective for specific functions that enable flexible procedures and communications (Donaldson, 2005).

Besides these two forms of structures, the integrated structure was found to support the implementation of ABC by Telecom. Telecom used the integrated form of structure to establish a specific department to improve communications between Accounting and Engineering. The integration not only enabled Telecom to respond to rapid changes in competition but also support the implementation of ABC.

Although the mechanistic structure could help increase employee participation, the organic structure enables a faster implementation process. Therefore, the implementation of ABC needs both the mechanistic and organic structure and moreover, the use of the top-down and bottom-up strategies during the process by the three companies could result in a higher probability of success (Shields & Young, 1989).

Another factor influencing the design and implementation stage is organisational culture. A strong organisational culture, which focuses on teamwork and performance aligned with the companies’ goals, assists the successful implementation of ABC/ABB. The empirical evidence found that strong organisational culture was created by human resource development programs combined with the Thai national culture.

The original behaviours of Thai people are helpful, supportive, flexible and pragmatic to accept innovative and logical ideas (Komin, 1990) and they prefer to follow their managers to avoid future uncertainty (Hofstede, 2007). These characteristics could inhibit the development of creative and innovative ideas which could enhance organisations. However, Thais do not share their opinions easily to avoid losing face (Komin, 1990), which might obstruct the development of organisations. Therefore, the three companies organised various human resource development programs to adjust the generic Thai culture to a desired organisational culture. Because of the flexibility and
pragmatism of Thai culture, it was not difficult to develop Thai employees’ attitudes and behaviours. The human resource development programs were designed to develop employees’ attitudes, behaviour and competencies for increasing benefit to the companies. As shown in Table 9-1, the three companies created their own organisational culture. The teamwork and innovative culture of Telecom and the performance-based culture of Bank enabled the implementation of ABC with less resistance. The helpful and effective learning culture of Oil supported the implementation of ABB.

The last factor which contributed to the design and implementation of ABC/ABB was IT. The ABC model was designed based on available information in existing IT systems. Well-known ERP systems, such as the SAP program used by Telecom and Oil, and the Oracle program used by Bank, provided accurate input information for the ABC system. Moreover, the empirical evidence found that costing software, such as Oros installed by Telecom and Oracle Cost Management software installed by Bank, supported the implementation of the ABC model in an effective manner. IT programs and devices reduced the employees’ workload burden and delivered a prompt response to the rapid changes in market.

Moreover, the capacity and compatibility of costing software were important to the implementation of ABC. The Bank’s costing software was more compatible and effective than Telecom’s. Bank used Oracle costing software that was compatible with its ERP system which was the Oracle program. In contrast to the case of Telecom, it used an old version of costing software which was difficult to integrate with SAP. Telecom installed Oros in 2002 and the software has never been updated as there is a lack of Oros venders in Thailand. Oros has been maintained by Telecom’s IT department. As a result, some data from SAP could not be transmitted automatically to Oros. Telecom developed specialist software to collect that data and upload it to Oros.

**Factors influencing the use of information stage** (Research Question 4)

It was found that organisational strategy, organisational culture and IT also influenced the use of ABC/ABB information.

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The three companies use ABC/ABB information to achieve their organisational strategies and respond to rapid changes in the external environment. Telecom uses ABC information for pricing, planning, controlling costs and managing non-value added activities in order to enhance its competitive advantage and differentiation. Bank uses ABC information for evaluating the performance of products and services, pricing, identifying profit maximisation opportunities and customer satisfaction projects. Oil uses ABB to minimise costs, particularly logistical and environmental costs, to enhance decision-making and to evaluate new projects to enhance its competitive advantage.

Moreover, teamwork and innovative culture and performance-based culture encouraged employees to use ABC, and a helpful and learning culture encouraged employees to use ABB to develop their working competencies to enhance their performance and corporate performance. Both existing IT systems and costing software provided accurate cost information for better decision-making and a fast response to rapid changes in the external environment.

**Factors related the success of ABC/ABB implementation** (Research Question 5)

The empirical evidence of this research found that a combination of factors enabled all three companies to successfully implement ABC/ABB. To effectively implement ABC, companies should concentrate full attention on four contingency factors (IT, organisational strategy, structure and culture), the seven success factors proposed by Shields (1995), the ABC team and external consultants. The success of ABB implementation requires only the full attention to four contingency factors and the seven success factors. As Oil implemented ABB, the ABC team was not important. Interestingly, Oil did not receive any external consultant supports to successfully implement ABB.

Moreover, this research found the interrelationship among success factors as shown in Figure 9-1. Top management played an important role in the successful implementation of ABC/ABB and drove other factors to achieve these efforts. Four contingency factors show the organisational readiness for implementing new costing systems. Top management had clear objectives for implementing ABC/ABB which were linked to organisational strategy and effectively communicated throughout the organisations. Top
management encouraged the development of employees’ attitudes and skills to be ready for changes in management systems. The implementation of ABC/ABB needs an effective IT system which can provide accurate input data for the ABC/ABB systems. This was presented in the case companies.

**Figure 9-1: The relationship of factors related to the ABC/ABB implementation success**

This research notes that the different combination of factors contributed to the success stories (see Chapter 8 – Section 8-3). Telecom paid less attention to some factors such as less top management support after the design stage, less training in designing, implementing and using the ABC system, vague linkage of the ABC system to performance evaluation and compensation, inadequate resources, unclear consensus about the objective of ABC implementation at the beginning, high workload for the ABC team and less support from external consultants. As a result, Telecom cannot implement full ABC system. It experienced more behavioural and technical challenges
than other case sites. However, Telecom intends to continually develop and use ABC, as it perceives the benefits of ABC.

Bank was the most successful in implementing ABC as it had high attention to all success factors. Bank completed the implementation of ABC within three years. Oil successfully implemented ABB and it fulfilled the effective ability of ABB for cost-saving. To implement ABB, the ABC team and external consultants were not important to Oil.

9.3.2 The Contingency Factors in Developing versus Developed Economies

The empirical evidence of this research found many differences in contingency factors between developing and developed economies as follows.

- At the initiation and adoption stages, the Government policy in Thailand has no directive on ABC/ABB implementation, unlike in Portugal’s case where the motivation for adopting ABC is mainly initiated by the state, not from competition and technology (Hopper & Major, 2007). The main role of the Thai Government is to stimulate and control the competitive environment through various laws, regulations and policies.

- In the literature, competition, organisational strategy and organisational structure were found to influence the design of the ABC model, and IT and organisational structure were found to influence the implementation of the ABC model in developed economies. In contrast, this study found that organisational strategy, organisational structure, Thai culture and technology influenced both the design and implementation stages of the ABC model.

- The implementation of ABC/ABB in this study required both mechanistic and organic structures, not only mechanistic structure which was found by studies in developed countries (see Anderson, 1995; Gosselin, 1997; Kallunki & Silvola, 2008). This research also argued that for companies in developed countries which have mechanistic structures, a mechanistic structure does not necessarily cause difficulties as long as it is used in a strategic manner, as Bunce et al.’s findings (1995). As the Thai culture is characterised by high power distance and high
uncertainty avoidance (Hofstede, 2007), Thai employees prefer centralised leadership and respect their superiors. Therefore, top management used mechanistic structures to communicate about the implementation of ABC/ABB to their employees. As respecting their superiors and avoiding future uncertainty is in their nature, Thai employees would take their top management’s orders into actions. Moreover, the organic structure is needed for informal communication between employees from relevant departments to achieve the orders from top management.

- This study found that a strong organisational culture encourages the implementation success, especially in a teamwork and performance-based culture. A strong organisational culture is created by the adjustment of the national culture using human resource development programs. It is not problematic to adjust Thai culture, as Thai values encourage flexibility in response to any changes. This unique culture, which includes respect for seniors, kindness, gratefulness and flexibility in response to any changes (Komin, 1990) (Thailand has been a Kingdom for many centuries) creates harmonious work places. Studies in developed countries indicated only the effect and characteristics of organisational culture which neglects the causes of organisational culture (see Baird et al., 2007; Baird et al., 2004)

- This study claims that well-known ERP, such as SAP and Oracle, provided accurate input information for the implementation of the ABC system. Costing software, such as Oros and Oracle Cost Management supported the effective implementation of the ABC model. Although prior studies found that IT was associated with the implementation of ABC, they did not specifically identify the types of IT systems or costing software which could help implementation (Askarany et al., 2007; Krumwiede, 1998).

- Only two factors were found to be effective in the use of ABC information in developed countries and these were competition and organisational structure. Conversely, this study found that not only competition and organisational structure, but organisational strategy, culture and IT also influenced the use of ABC information.
Companies in developed countries which focused on the differentiation strategy adopt ABB (Simon, 1990). In contrast, companies in this study which focused on cost leadership adopted ABB.

Companies in developed countries which have mechanistic structures faced difficulty in implementing ABB (see for example, Bunce et al., 1995). However, this study found that a mechanistic structure does not necessarily cause difficulties as long as it is used in a strategic manner. It is interesting to note that the implementation of ABB in this study required both mechanistic and organic structures.

9.3.3 The Features of ABC/ABB Models

This research illustrated two ABC models (see Chapter 5 - Section 5.4.2 and Chapter 6 - Section 6.4.2) and one ABB model (see Chapter 7 – Section 7.4.2), which are summarised as follows.

The combination of traditional cost system and ABC system

Due to an inadequacy of supports from top management and external consultants, relevant resources and knowledge in designing, implementing and using ABC system, Telecom cannot implement full ABC system (see Chapter 8 - Section 8.4.1). As shown in Chapter 5 – Section 5.4.2, Figure 5.4, 5.5 and 5.6, the cost allocation in Telecom is still based on a departmental basis (or traditional basis) not on core business activities as expected in ABC. As IT systems did not fully integrate with the costing software, or objective of implementing ABC, some indirect costs were not assigned to activities. Instead, they were assigned directly to cost objects. Costs of back office are allocated to specific cost objects which are in-house services; as a result, costs of products and services are not included costs of back office.

Moreover, the complexity of product and service technologies leads to the difficulty of identifying activities and cost drivers. Although Telecom uses multiple cost drivers as the same way as the ABC system, identified cost drivers have not been the most suitable ones as the ABC team’s expect.
The combination of ABC system and TDABC concept

With full attention in all success factors and the readiness of all organisational components (such as organisational structure, strategy, culture and IT), Bank could not only implement the full ABC system but also develop the traditional ABC model to be more practical and fit its environment (see Chapter 8 - Section 8.4.1). As shown in Chapter 6 – Section 6.4.2 and Figure 6-3, external consultants play an important role to assist Bank in expanding the traditional ABC model into two main activities which are considered as Core and Sustain activities. Sustain activities include costs of service departments which are allocated to core activity based on activity cost drivers. Moreover, time standard which is under the TDABC concept has been used to prepare cost drivers for cost allocation. This shows an emerging hybrid technique, which is the combination of the traditional ABC system and the TDABC concept.

The ABB information flow

As the nature of oil business, the ABB information flow in the oil company is slightly different from the traditional ABB information flow (see Chapter 7 - Section 7.4.2 and Chapter 8 – Section 8.4.2). The flow starts with the setting up of expected profitability, which is the last step of the traditional ABB information flow, and is followed by a consensus about the requirements of production by using capacity analysis. Subsequently, activity and resource requirements are analysed concurrently with the analysis of its activity and resource costs in order to reach its expected profitability. With full support from top management, sufficient resources and helpful and learning organisational culture, the designed ABB information flow is adopted in practices successfully.

9.4 RESEARCH IMPLICATIONS

This study provides theoretical and practical implications to the management accounting community and companies in developing economies that want to implement ABC/ABB as follows.
• This study provides a deeper empirical understanding of contingency factors that influence each stage of the ABC/ABB implementation process and the interrelationship among factors by using the qualitative approach (see Section 9.3.1). With in-depth information, this study seeks the hidden factors, particularly the attitudes of Thai culture, organisational structure, the causes of competition that the cases faced, specific IT which supported the implementation of ABC/ABB, and the roles of organisational strategy. It also enhances the description of factors that influences the implementation of ABC/ABB to an extent not possible through the quantitative approach. This could expand and strengthen contingency theory to have a better explanation of changes in management accounting techniques. It claims that the classical organisational theory as contingency theory is still strong in explaining changes in management accounting techniques.

• This study provides an empirical set of factors influencing the process of ABC/ABB implementation in the context of developing economies, and which contingency factors might play differently from developed economies. Moreover, it sheds new light on how different contingency factors play in developing and developed countries by giving empirical evidence highlighted in Section 9.3.2.

• The study provides the reality of ABC/ABB implementation experienced by Thai companies as the representative of developing economies which is required in management accounting research (Hopper et al., 2009). It also provides studies of how Asians successfully implement a Western management technique.

• The explanation of the ABC/ABB implementation process by three case studies provides a fundamental knowledge about the preparation, design, implementation and use of information, and suggest what other companies should focus on to successfully implement ABC/ABB in a shorter time and with fewer problems.

• The cases in this study can be used as case studies for teaching accounting students. These case studies will provide the facts about what actually emerges in the implementation of ABC/ABB system which is not always provided in text books (Vaivio, 2008).
9.5 RESEARCH LIMITATIONS

There are some limitations in this study as follows.

- The use of qualitative research has been criticised because of research-related problems. This research employed in-depth interviews as the main research method. Researchers need to get close to participants to have a better understanding of the whole process of ABC/ABB implementation. Moreover, the coding and interpretation processes were based on the researcher’s judgments. As there is unavoidable subjectivity, it might have possible bias in the results. To reduce the level of this subjectivity, reliability and validity checks were undertaken in order to ensure the quality of the qualitative approach.

- The contingency theory which was used in this study has been criticised that it highly focuses on internal and external factors reflecting the context within organizational operation. Subsequently, other factors such as the power of key decision-makers, values, beliefs and ideology as the criticism by Hopper and Powell (1985) might not be recognised in this study.

- Thai language was used in the interviews and translated to English by the researcher and qualified translator in order to reduce misinterpretation which might occur in the translations. However, it might still slightly have misinterpretation.

- Since the results from interviews are based on knowledge, cognitive base, qualifications, experience and confidence of the interviewees, this might yield incomplete or biased information which affects the results of the study.

- Although this study selected three of Thailand’s largest companies as case studies to gain in-depth information of ABC/ABB implementation, the results from interviews may not certainly represent the overall nature of ABC/ABB implementation for all Thai industries or for developing economies in general.
• The design of ABC/ABB models which were illustrated in the research were presented as a part of the system, not the whole system. This was done to maintain the confidentiality of participants and was largely outside the researchers’ control. Sometimes only parts of the control system were made available. Likewise, access to participants was limited to divisions or work groups.

9.6 FUTURE RESEARCH DIRECTION

As described in the research implications and limitations sections, there are many areas for future research. The following are directions for future studies evolving from this research.

• The set of contingency factors and success factors found in this study can be tested by quantitative methods, not only across Thailand but in other developing economies. Future research in this area will extend literature on ABC/ABB adoption and implementation.

• Future research can use the set of factors and methodology used by this study to qualitatively investigate other industries or companies in the same industry in Thailand, or in other developed countries. The comparison of two companies in different industries or two different companies in the same industry will highlight further differentiation or similarity between factors.

• The comparison of two companies in the same industry, but in different countries would reveal factors that are influenced by different nationalities, cultures and political situations.

• The adaptations of ABC to hybrid forms such as the TDABC techniques applied in practice can be further explored and offered as a contribution to the developing techniques in practice.
9.7 SUMMARY

To implement ABC/ABB, contextual, organisational and behavioural factors need to be considered. To focus only on some factors might lead to inefficient implementation. Each factor plays different roles in the implementation of ABC/ABB based on each business and its environment. In the Thai context, six contingency factors were found to influence the process of ABC implementation by Thai companies. High competition which is caused by changes in government policy and the development of production and service technology shaped organisational strategy relating to the implementation of ABC at the initiation and adoption stage. Organisational strategy encouraged the development of organisational structure, culture and technology at the design stage. Organisational structure, culture and IT influenced implementation stage and organisational strategy and culture influenced the use of information stage. Organisational culture was influenced by organisational strategy (human resource development programs) and Thai national culture of employees. Companies which implement ABC focus mainly on differentiation strategy; whereas, companies which implement ABB for budgeting focus mainly on cost leadership strategy. The design stage required mechanistic and organic structure; while, the implementation stage required organic structure. The implementation of ABC required teamwork and an innovative culture and the implementation of ABB required a helpful and learning culture.

Four contingency factors (organisational strategy, organisational structure, organisational culture and technology), and the seven success factors proposed by Shields (1995) combined with ABC team and external consultants were found to be related to the success of ABC implementation in this study. This study argues that the difference in attention to each factor gives a different success story. To implement ABC/ABB successfully, the full attention to each factor is needed. A strong organisational culture can help companies implement ABC/ABB with less resistance.
REFERENCE LIST

1. Company archival records and documentary sources:

   - *Telecommunications Company*
     - Annual reports from 1998 to 2010
     - Form 56-1 from 2001 to 2010
     - Official website of the company viewed in July 2011, 2012 and February 2013
     - The costing reports viewed at the company’s head office in September 2012

3 Form 56-1 is the disclosure of additional information that the Thai listed companies have to report to the SET.

- **Bank**
  - Annual report from 2001 to 2010
  - Form 56-1 from 2001 to 2010
  - Official website of the company viewed in July 2011, 2012 and March 2013
  - The Bank’s ABC manual viewed at the Bank’s head office in November 2011

- **Oil Company**
  - Annual report from 2002 to 2010
o Form 56-1 from 2002 to 2010
o Sustainability report from 2006 to 2010
o Official website of the company viewed in July 2011, 2012 and April 2013
o The budgeting reports viewed at the company’s head office in September 2012
o The reports of chemical substances used in refinery plants viewed in August 2012

2. Secondary sources:


tion in activity


[283]


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APPENDIX A

PLAIN LANGUAGE STATEMENT FOR INTERVIEWS (in English Language)

INVITATION TO PARTICIPATE IN A RESEARCH PROJECT
PROJECT INFORMATION STATEMENT

Project Title: Factors influencing the implementation of Activity-Based Costing (ABC) in Thai companies

Investigators:
• Miss Paweena Kongchan (PhD candidate, College of Business, School of Accounting, RMIT University, paweena.kongchan@rmit.edu.au, +613 9925 5509)
• Associate Professor Prem Yapa (Principal supervisor, Associate Professor, College of Business, School of Accounting, RMIT University, prem.yapa@rmit.edu.au, +613 9925 1606)
• Dr. Antony Young (Second supervisor, Senior Lecturer, College of Business, School of Accounting, RMIT University, antony.young@rmit.edu.au, +613 9925 5752)

Dear Participant

You are invited to participate in a research project being conducted by RMIT University. This information letter describes an overview of the proposed research project in straightforward language, or ‘plain English’. Please read this letter carefully and be confident that you understand its contents before deciding whether to participate. If you have any questions about the project, please ask one of the investigators identified above.

Who is involved in this research project? Why is it being conducted?

My name is Paweena Kongchan and I am currently a full time PhD student from the School of Accounting, RMIT University. I am conducting a case study to identify factors influencing the implementation of Activity-Based Costing (ABC) in Thai companies and explore the process of ABC implementation through the framework of contingency and institutional theory. This project is being conducted as a part of my PhD and under the supervision of Associate Professor Prem Yapa; my principal supervisor and Dr. Antony Young; my second supervisor. The project has been approved by the RMIT Business College Human Ethics Advisory Network, College of Business.

What is the project about? What are the questions being addressed?

The research project will identify factors influencing the implementation of ABC in three large Thai companies listed on the Stock Exchange of Thailand (SET). The project will be conducted through interviews with five people from each company who have gained experience in ABC implementation. These five people include Chief Executive Officer (CEO), a director of accounting, an ABC project manager, an ABC team member and another manager who uses information from the ABC system.
Why have you been approached?
Your company has been identified from the SET. Your company has implemented the ABC system during the recent past and it is integrated into your current accounting system. Your experience and knowledge of ABC implementation is important to this project. Your response will contribute to understanding of factors influencing ABC implementation.

If I agree to participate, what will I be required to do?
If you agree to participate in this research project, you will be asked to attend an interview in order to provide insight into the process of ABC implementation in your company. It will take approximately 1 to 1 and 1/2 hours and it involves some questions about your experiences on the implementation of ABC in your company. The interview will be conducted at the time and location to suit you. You will be asked if the interview can be digitally audio-recorded and will be followed up for unclear information via e-mail or telephone. You are welcome to review completed interview transcript before it is considered for analysis.

What are the risks or disadvantages associated with participation?
Your participation in this project is entirely voluntary and will have no impact on your work apart from the time taken for the interview. There are no perceived risks associated with participation of this interview. You can examine the interview protocol before deciding whether you want to participate. You are provided with a prescribed consent form. During your interview you have the right to withdraw partially or completely or refuse to answer any further questions or request to stop recording at any stage any time. Moreover, you have the right to ask any questions regarding to my research at any time. If you are concerned about your responses to any of questions or if you find participation in the project distressing, you should contact Associate Professor Prem Yapa as soon as convenient. Associate Professor Prem Yapa is my principal supervisor and can be contacted on . You may also contact Dr. Antony Young, my second supervisor on . My supervisors will discuss your concerns with you confidentially and suggest appropriate follow-up, if necessary.

What are the benefits associated with participation?
This project will contribute to the understanding of factors that influence the implementation of ABC in Thai companies. There is no direct benefit to the participants as a result of their participation. However, I will be delighted to provide you with a copy of the research report upon request as soon as it is published.

What will happen to the information I provide?
- The information you provide in the interview will be transcribed and cleaned of any comments that could identify you or your company. The collected interview data will be analysed and aggregated based on the themes of the research project. Your privacy and confidentiality will be strictly maintained in such a manner that you will not be identified.
- Your contact details and data will be kept confidential and only seen and analysed by Paweena Kongchan, Associate Professor Prem Yapa, and Dr. Antony Young during the data collection period. Only the researchers will have access to the data.
- Any information that you provide can be disclosed only if (1) it is protect you or others from harm, (2) a court order is produced, or (3) you provide the researchers with written permission.
- The findings of this project will be delivered in an Executive Summary with a report or in my PhD thesis. Subsequently, the findings of this study will be used in academic publications.
- To ensure that data collected is protected, the data will be retained for five years upon completion of the project after which time paper records will be shredded and placed in a security recycle bin and electronic data will be deleted/destroyed in a secure manner. All hard data will be kept in a locked filing cabinet and soft data in a password protected computer in the office of the investigator in the School of Accounting at RMIT University.

Thank you very much for your contribution to this research.
Sincerely Yours,

Paweena Kongchan
PhD Candidate
School of Accounting,
RMIT University
Level 15, 239 Bourke Street,
Melbourne, VIC, AUSTRALIA 3000

Any complaints about your participation in this project may be directed to the Chair, Business College Human Ethics Advisory Network, College of Business, RMIT, GPO Box 2476V, Melbourne, 3001. The telephone number is (03) 9925 5598 or email address rdu@rmit.edu.au. Details of the complaints procedure are available from http://www.rmit.edu.au/browse;ID=2iqmb7hnpye
APPENDIX B

PLAIN LANGUAGE STATEMENT FOR INTERVIEWS (in Thai Language)

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Building 108
Level 15, 239 Bourke Street
Melbourne VIC 3001
Australia
Tel. +61 3 9925 5700
Fax +61 3 9925 5741
www.rmit.edu.au

01 พฤศจิกายน 2554

INVITATION TO PARTICIPATE IN A RESEARCH PROJECT
PROJECT INFORMATION STATEMENT

Project Title:
ปัจจัยที่มีผลต่อการนำการปันส่วนต้นทุนตามกิจกรรม (Activity-Based Costing: ABC) มาใช้กับบริษัทในประเทศไทย
(Factors influencing the implementation of Activity-Based Costing in Thai companies)

Investigators:
• Miss Paweena Kongchan (PhD candidate, College of Business, School of Accounting, RMIT University, paweena.kongchan@rmit.edu.au, +613 9925 5509)
• Associate Professor Prem Yapa (Principal supervisor, Associate Professor, College of Business, School of Accounting, RMIT University, prem.yapa@rmit.edu.au, +613 9925 1606)
• Dr. Antony Young (Second supervisor, Senior Lecturer, College of Business, School of Accounting, RMIT University, antony.young@rmit.edu.au, +613 9925 5752)

เรียน ท่านผู้มีส่วนร่วมในงานวิจัย

ท่านได้รับเชิญให้มีส่วนร่วมในงานวิจัยชิ้นนี้ที่ดำเนินการโดย RMIT University เอกสารฉบับนี้ขึ้นถึงความสามารถของงานวิจัยและสิทธิของท่านในการให้ข้อมูลสำหรับงานวิจัย กรุณาอ่านคำชี้แจงโดยละเอียดก่อนเข้าร่วมกับงานวิจัยครั้งนี้ หากท่านมีข้อสงสัยเกี่ยวกับงานวิจัย กรุณาติดต่อผู้ชี้แจงโดยละเอียดข้างต้น

ใครที่มีส่วนร่วมในงานวิจัยชิ้นนี้? ทำไมจึงต้องดำเนินการวิจัยชิ้นนี้?

ดิฉันนางสาวปวีนา กองจันทร์ กำลังศึกษาต่อระดับปริญญาเอกสาขาวิชาการบัญชี ณ RMIT University และกำลังทำงานวิจัยเกี่ยวกับปัจจัยที่มีผลต่อการนำการปันส่วนต้นทุนตามกิจกรรม (Activity-Based Costing: ABC) มาใช้กับบริษัทในประเทศไทย และสำรวจกระบวนการในการนำระบบ ABC มาใช้ ภายใต้กรอบแนวคิดทฤษฎี contingency และ institutional theory ซึ่งงานวิจัยนี้เป็นส่วนหนึ่งของการศึกษาระดับปริญญาเอกของดิฉัน และอยู่ภายใต้การให้คำปรึกษาของ Associate Professor Prem Yapa และ Dr. Antony Young ท่านทั้งสอง

งานวิจัยนี้จะมีประโยชน์อะไร?
งานวิจัยนี้จะทำการศึกษาปัจจัยที่มีผลต่อกำกับการนำระบบ ABC มาใช้ใน 3 บริษัทใหญ่ที่จดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทย ในการศึกษาจะใช้การสัมภาษณ์บุคคลที่เกี่ยวข้องกับการดำเนินการนำระบบ ABC มาใช้ในองค์กร องค์กรละ 5 คน ได้แก่ ประธานบริษัท (CEO), ผู้อำนวยการฝ่ายบัญชี (director of accounting), ผู้จัดการโครงการ ABC (ABC project manager), ผู้ร่วมโครงการ ABC (ABC team member) และผู้จัดการแผนกที่มีการใช้ข้อมูลจากระบบ ABC ในองค์กร ทั้งหมดซึ่งรวมถึงข้อมูลเกี่ยวกับประสบการณ์ในการนำระบบ ABC มาใช้ในองค์กร

ที่มาที่ได้จากการวิจัยที่เกี่ยวข้องกับงานวิจัยนี้?
บริษัทของท่านเป็นบริษัทใหญ่ที่จดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทย และมีการนำระบบ ABC มาใช้ในองค์กร ดังนั้นประสบการณ์และความรู้เกี่ยวกับการนำระบบ ABC มาใช้ในองค์กรของท่าน จึงมีความสำคัญอย่างมากต่องานวิจัย การคัดเลือกที่จะเข้าร่วมกับงานวิจัยนี้ จะเป็นประโยชน์ต่อการศึกษาปัจจัยที่มีผลต่อกำกับการนำระบบ ABC มาใช้ในองค์กรของไทย

หากท่านคิดเห็นว่าจะเข้าร่วมกับงานวิจัย ท่านจะต้องทำอะไร?
ถ้าท่านต้องการจะเข้าร่วมกับงานวิจัย ท่านจะถูกสัมภาษณ์เกี่ยวกับกระบวนการในการนำระบบ ABC มาใช้ในองค์กรของท่าน การสัมภาษณ์จะใช้เวลา 1 – 1½ ชั่วโมงโดยประมาณ เก็บบันทึกข้อมูลด้วยเครื่องบันทึกเสียง และตรวจสอบความถูกต้องของข้อมูลทั้งหมดผ่านการสื่อสารทางอีเมล (email) หรือโทรศัพท์แล้วแต่ท่านจะสะดวก การสัมภาษณ์จะดำเนินการตามเวลาและสถานที่ที่ท่านสะดวก คณะผู้วิจัยยินดีเป็นอย่างยิ่ง หากท่านต้องการตรวจสอบข้อมูลที่ท่านได้รับหลังจากการสัมภาษณ์ เข้าร่วมกับงานวิจัย

ในการเข้าร่วมงานวิจัยนี้จะมีความเสี่ยงหรือข้อเสียอะไร?
การเข้าร่วมงานวิจัยนี้ ข้อมูลที่ท่านให้มาจะไม่มีผลกระทบต่อกำกับการดำเนินงานของท่าน ไม่มีความเสี่ยงใด ๆ ในการเข้าร่วมงานวิจัย ท่านสามารถตรวจสอบกระบวนการดำเนินงานที่เสนอทั้งในกรอบของงานวิจัย หากท่านคิดว่าท่านจะเข้าร่วมกับงานวิจัย ท่านจะได้รับแบบฟอร์มแสดงความยินยอม (Consent Form) ในการให้ข้อมูลกับงานวิจัย และในระหว่างการดำเนินงานท่านสามารถถอนตัวได้โดยไม่ต้องแจ้งให้ทราบ หรือให้คำสั่งการดำเนินงานใดก็ได้ตลอดช่วงการดำเนินงาน นอกจากนี้ท่านยังสามารถตรวจสอบข้อมูลของตนเองได้ตลอดเวลา หากท่านมีความฉงนเกี่ยวกับการสัมภาษณ์ หรือท่านมีความเหนื่อยใจที่จะมีส่วนร่วมกับงานวิจัย ท่านสามารถติดต่ออาจารย์ทั้งสองท่าน (Associate Professor Prem Yapa โทรศัพท์ +61399251606 และ Dr. Antony Young โทรศัพท์ +61399255752) อาจารย์ทั้งสองท่านจะอธิบายเกี่ยวกับสิ่งที่ท่านกำลังกังวลเพื่อให้ท่านเกิดความมั่นใจในงานวิจัย และแนะนำการติดตามผลการวิจัยอย่างเหมาะสมหากจำเป็น

ในการเข้าร่วมงานวิจัยนี้จะได้ประโยชน์อะไร?
ผลที่ได้จากการวิจัยนี้ ท่านจะได้ประโยชน์ต่อการพัฒนาการศึกษาด้านบัญชีบริหารด้านจัดการทุกอย่างที่ท่านต้องรู้ รวมถึงเป็นประโยชน์ต่อองค์กรที่จะได้เห็นภาพรวมของระบบ ABC และสามารถนำ ABC มาใช้ได้ก็จะเป็นประโยชน์ต่อการพัฒนาสูงสุด การเข้าร่วมกับงานวิจัยไม่มีผลประโยชน์ต่อทุกผู้ที่เข้าร่วม อย่างไรก็ตามความรู้ที่จะจัดสรรงานแผนภูมิการวิจัยให้กับท่าน หากท่านต้องการ

อะไรจะเกิดขึ้นกับข้อมูลที่ท่านให้แก่งานวิจัย?
- ข้อมูลจะถูกคัดลอกและสร้างข้อความที่ระบุถึงตัวท่านและบริษัทของท่าน ข้อมูลจะถูกวิเคราะห์และสรุปภายใต้กรอบงานวิจัย ความเป็นส่วนตัวและความลับของท่านจะถูกกันไว้ตามข้อตกลง
- ข้อมูลการติดต่อและข้อมูลจากการสัมภาษณ์จะถูกเก็บเป็นความลับ เฉพาะจะมีผู้รักษาข้อมูลที่แน่นอนที่สุด ท่านยังสามารถดูข้อมูลที่ถูกเก็บรักษาได้ตลอดเวลา หากท่านมีความกังวลเกี่ยวกับการสัมภาษณ์ ท่านยังสามารถขอให้เจ้าหน้าที่ของพื้นที่ใด ๆ ได้รับแบบฟอร์มแสดงความยินยอมที่ท่านได้รับจากท่าน หากท่านต้องการตรวจสอบข้อมูลที่ท่านได้รับจากท่าน หากท่านต้องการ
ข้อมูลทุกอย่างจะถูกปิดเผยได้ทั้งitten (1) ข้อมูลนั้นสามารถป้องกันทางและบริการของท่านจากความเสียหายใดๆ (2) ต้องเสี่ยงรายหรือ (3) ท่านอนุญาตให้คณะผู้วิจัยปิดเผยข้อมูลได้

ผลการวิจัยจะถูกเขียนในบทสรุปให้บริการพร้อมกับรายงานหรือวิทยานิพนธ์ของกลุ่ม และจะถูกอัครศึกษาวิชาการ

เพื่อให้นักข้อมูลได้รับการป้องกัน ข้อมูลจะถูกเก็บ 5 ปีหลังจากที่งานวิจัยสำเร็จ จากนั้นข้อมูลที่เป็นกระดาษจะถูกทำลายและเก็บไว้ในที่ปลอดภัย ส่วนข้อมูลอิเล็กทรอนิกส์จะถูกเก็บด้วยวิธีที่ปลอดภัย ข้อมูลที่ถูกเก็บที่ไม่สามารถทำลายได้จะถูกเก็บในชุดเอกสารที่มีที่ล็อก หรือเก็บใบฐานข้อมูลที่มีรหัสผ่านของ School of Accounting, RMIT University

ขอขอบพระคุณเป็นอย่างสูง ที่ท่านให้ความกรุณาข้อมูลอันเป็นประโยชน์ต่อก่อนวิจัยครั้งนี้

ขอแสดงความเคารพอย่างสูง

นางสาวปวีนา กองจันทร์
นักศึกษาปริญญาเอก
School of Accounting
RMIT University

งานวิจัยนี้ได้รับการรับรองจากคณะกรรมการสำนักงานวิจัยของ RMIT University ที่กล่าวถึงข้อสงสัยหรือการเรียกร้องเกี่ยวกับงานวิจัยนี้ ท่านสามารถแจ้งได้ที่: The chair, Business College Human Ethics Advisory Network, College of Business, RMIT University GPO Box 2476 V, Melbourne 3001, The telephone number is (03) 9925 5998 or email address rdu@rmit.edu.au Details of the complaints procedure are available from http://www.rmit.edu.au/aufbrowsereID=2/jgrnb7hjnpyo
APPENDIX C

CONSENT FORM

RMIT BUSINESS COLLEGE HUMAN ETHICS ADVISORY NETWORK

Prescribed Consent Form for Persons Participating In Research Projects Involving Interviews, Questionnaires, Focus Groups or Disclosure of Personal Information

COLLEGE OF SCHOOL/CENTRE OF
Business Accounting

Name of Participant:

Project Title:
Factors influencing the implementation of Activity-Based Costing (ABC) in Thai companies

Name(s) of Investigators:
(1) Pawee Kaongchan
Phone:

(2) Phone:

1. I have received a statement explaining the interview/questionnaire involved in this project.
2. I consent to participate in the above project, the particulars of which - including details of the interviews or questionnaires - have been explained to me.
3. I authorise the investigator or his or her assistant to interview me or administer a questionnaire.
4. I give my permission to be audio taped: ☐ Yes ☐ No
5. I give my permission for my name or identity to be used: ☐ Yes ☐ No
6. I acknowledge that:

(a) Having read the Plain Language Statement, I agree to the general purpose, methods and demands of the study.
(b) I have been informed that I am free to withdraw from the project at any time and to withdraw any unprocessed data previously supplied.
(c) The project is for the purpose of research and/or teaching. It may not be of direct benefit to me.
(d) The privacy of the information I provide will be safeguarded. However should information of a private nature need to be disclosed for moral, clinical or legal reasons, I will be given an opportunity to negotiate the terms of this disclosure.
If I participate in a focus group I understand that whilst all participants will be asked to keep the conversation confidential, the researcher cannot guarantee that other participants will do this.
(e) The security of the research data is assured during and after completion of the study. The data collected during the study may be published, and a report of the project outcomes will be provided to ________ (researcher to specify). Any information which may be used to identify me will not be used unless I have given my permission (see point 5).

Participant’s Consent
Participants should be given a photocopy of this consent form after it has been signed.

Any complaints about your participation in this project may be directed to the Chair, Business College Human Ethics Advisory Network, College of Business, RMIT, GPO Box 2476V, Melbourne, 3001. The telephone number is (03) 9925 5598 or email address rdu@rmit.edu.au. Details of the complaints procedure are available from [http://www.rmit.edu.au/browse;ID=2iqmb7hnpyo](http://www.rmit.edu.au/browse;ID=2iqmb7hnpyo)
The evidence describing relationships between identified factors influencing the process of ABC implementation by Telecommunications Company

<table>
<thead>
<tr>
<th>The relationships</th>
<th>Exploratory Evidence</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic, political and natural disaster situation → Government</td>
<td>To enhance internationally competitive position for the country, the quality of telecommunications infrastructure was required. As the limitation of TOT’s and CAT’s capability in developing national telecommunications infrastructure, the Government wanted to promote free world trade and market opening competition in order to encourage telecommunications companies developing themselves against new competitors.</td>
<td>(NESDB &amp; World Bank, 2008)</td>
</tr>
<tr>
<td>Economic, political and natural disaster situation → Competition</td>
<td>- The economy has been recovered since mid-1997 (economic crisis). Growth rate of mobile users increased. - In 2006, the economic rate was slow down, the cost of living continued to rise. Consumers too have become more careful in their spending habits.</td>
<td>Annual report 2000, p23 - Annual report 2006, p79</td>
</tr>
<tr>
<td>Government → Competition</td>
<td>- The Government has a commitment to the WTO to liberalise telecommunications industry by the year 2006. This created a more competitive environment for the telecommunications industry. - The 8th National Economic and Social Development Plan stated that telecommunications liberalisation will render the market more competitive.</td>
<td>Annual report 1999, p39 - Annual report 1999, p27</td>
</tr>
<tr>
<td>Government → Organisational Strategy</td>
<td>Telecom implemented a corporate governance plan as its strategy in accordance with the Code of Best Practices of the Stock Exchange of Thailand.</td>
<td>Annual report 2000, p37</td>
</tr>
<tr>
<td>Mobile Technology → Competition</td>
<td>The rapid change in technology has become a key factor of competition in the telecommunications industry.</td>
<td>Annual report 2007, p61</td>
</tr>
<tr>
<td>Competition → Organisational Strategy</td>
<td>- In order to respond to the price competition in 2001, Telecom changed its strategy from mass to market segmentation and offered special charges for calls within a user group in 2006. - Telecom introduced new mobile technologies, retained a high quality of network services, a variety of products and services and increased customer relationships. - The rapid changes occurring in consumer behaviour to use more wireless services lead to the development and investment in mobile technology in response to customers’ needs.</td>
<td>Annual report 2006, p45 - Annual report 2002, p14 - Annual report 2000, p4</td>
</tr>
<tr>
<td>Mobile Technology → Organisational Strategy</td>
<td>Due to the rapid changes in technology, Telecom became a leader in mobile technology and introduced updated technology to customers.</td>
<td>Annual report 2000, p4</td>
</tr>
<tr>
<td>Organisational Strategy → Organisational</td>
<td>Due to the rapid change in technology, Telecom needed to invest more in infrastructure and networks. - The difficulty in communications between Engineering and Accounting resulted in slow decision-making.</td>
<td>Annual report 2000, p4 - Interviewee 4-Telecom</td>
</tr>
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<tr>
<td></td>
<td>Budgeting and Cost Analysis was established to cope with this problem.</td>
<td>- The Company has an information network that can be used for timely decision-making. It also has an effective information security system.</td>
</tr>
</tbody>
</table>

- Annual report 2006, p78-80
- Annual report 2006, p45
- Interviewee 1-Telecom
- Interviewee 1-Telecom
- Interviewee 1-Telecom
- Interviewee 3-Telecom
- Interviewee 4-Telecom
- Interviewee 1-Telecom
- Interviewee 2-Telecom
- Interviewee 1-Telecom
## APPENDIX E

The evidence describing relationships between identified factors influencing the process of ABC implementation by Bank

<table>
<thead>
<tr>
<th>The relationships</th>
<th>Evidence</th>
<th>Sources</th>
</tr>
</thead>
</table>
| Economic, political and natural disaster situation → Government | - In 1978, the BOT adjusted the exchange rate and abolished the par value system due to the instability of major world currencies by pegging the Baht to several major currencies.  
- From 1989 to 1993, the financial sector was reformed to boost domestic savings and foreign capital inflows, improve the capability of the financial sector to compete internationally, and develop Thailand into a regional financial centre. | - (Lauridsen, 1998)  
- (Lauridsen, 1998) |
| Economic, political and natural disaster situation → Competition | - In order to survive during an economic recession and falling credit growth, commercial banks have to focus on retail customers, with whom considerable potential still remains. Competition has become intense to win a broader base of this type of client.  
- Competition in housing loans remained strong, following the growing economy that has raised household incomes and increased housing demand in Bangkok and the Metropolitan Region. | - Annual report 2001, p105  
- Annual report 2003, p43 |
| Government → Competition | - The Government, the BOT and the Ministry of Finance initiated reforms to several Financial Acts through the liberalisation of the interest rate and exchange rate.  
- The improving economy was boosted by the Government’s fiscal and economic policies to disperse public funds at the nation’s economic grassroots to stimulate local economic growth. These policies have significantly increased the spending power of the people and contributed towards continued economic recovery.  
- Government helped boost housing loans through extending the title transfer fee-reduction and tax-exemption from 2002 to 2003.  
- On December 30, 2004, the Minister of Finance approved the establishment of nine new Banks. It is expected that these newly approved banks will increase competition in the banking Industry. | - (Doner & Unger, 1993)  
- Annual report 2002, p5  
- Annual report 2003, p34  
- Annual report 2004, p9 |
| Government → Organisational Strategy | - Bank is concerned about costs in response to the government’s policy which controls fees and the interest on the credit cards. This policy affects the bank’s income. Bank wants to make sure that it still earns sufficient profit under this policy.  
- Bank implemented CSR in accordance with the provisions of SEC to enhance organisational culture and a professional Code of Conduct. | - Interviewee 5-Bank  
- Annual report 2001, p132 |
| Competition → Organisational Strategy | - Competition remains strong in the market, making it necessary for Bank to formulate operational strategies to meet the rapidly changing business environment.  
- The competition in credit card business remains high; credit card issuers utilise several strategies, including discounts and privileges to encourage credit card spending.  
- Amid continued economic growth and demand for investments from both the public and private sectors, | - Annual report 2003, p5  
- Annual report 2004, p32  
- Annual report 2005, p13 |
domestic liquidity is likely to recede further. As financial institutions are pushing forward for new loan extension, declining liquidity may heighten competition among financial institutions for deposits. This is particularly true in an attempt to retain their customer base and manage liquidity at sustainable levels.
- During the second half of 2005, there were several increases in commercial bank deposit rates and services and products were upgraded to better suit changing market conditions.
- Throughout 2006, competition for deposits among commercial banks, both domestic banks and foreign bank branches, as well as with state-owned specialised financial institutions, was intense, especially through fixed-term accounts offering attractive rates.
- Competition in the mutual fund business remained strong, especially with funds investing in the public sector’s debt securities with maturities not exceeding one year. Price competition also heightened, as management fees were slashed to attract investors.
- The competition between commercial banks for market share has intensified and articulated in both pricing and non-price marketing strategies.
- Concurrently, as commercial banks expected, the Thai economy improved during the post-national election period and domestic interest rates bottomed out. Commercial banks began to raise their fixed-term deposit interest rates from the third quarter of 2007.
- As for deposits, pricing competition eased and commercial banks continued to introduce new deposit products with special interest rates, plus attractive sales promotional programs. These promotions were designed to retain their deposit customer base, amid competition from other savings and investment alternatives providing higher returns than fixed-term deposits.

<table>
<thead>
<tr>
<th>Banking Service Technology → Organisational Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank has developed both service banking technologies and IT since 2001 in order to improve the quality of services.</td>
</tr>
<tr>
<td>Bank installed Channel Enhancement and Extension (CEE) to enhance capabilities in sales and services and IT-Capital (ITC) projects as a way of responding to diverse business needs, increasing competitive potential and ensuring more rapid development of new but complex products.</td>
</tr>
<tr>
<td>Technology and electronic advancements such as e-Internet Banking, e-Web Shopping Card and M-Commerce are products and services derived from the Company’s ongoing development of e-Banking.</td>
</tr>
<tr>
<td>Operational systems have been continually improved and are electronically-based to enhance the efficiency of operations. These improvements will help satisfy customers’ needs and maintain our position as a leader in the field.</td>
</tr>
<tr>
<td>Bank aims to develop into a strong institution that provides a variety of financial services of world-class quality through combining technology and human resources in order to provide benefits to customers, shareholders, employees and the country.</td>
</tr>
<tr>
<td>The EDC (Electronic Data Capture) network was developed and this connects with the computer networks of large-scale stores and their branches. This helps the Bank reduce the interchange fee.</td>
</tr>
</tbody>
</table>
| The Document Management System (DMS) was implemented in order to reduce the Legal Department’s | - Annual report 2005, p32
- Annual report 2006, p38
- Annual report 2006, p39
- Annual report 2007, p13
- Annual report 2007, p13
- Annual report 2009, p10
- Annual report 2001-2010
- Annual report 2008, p7
- Annual report 2001, p105
- Annual report 2004, p25
- Annual report 2004, p4
- Annual report 2003, p35
- Annual report 2003, p58
- Bank implemented the Document and Collateral Control System (DCS), which gathers credit approval documents, main contracts, subcontracts and collateral documents, and records them in the form of an image file to improve the records and documentation system.
- These projects were established to centralise all post-approval processes and standardise and increase service quality levels.
- To ensure long-term growth and leadership position, Bank has initiated the “Transformation” project that helps build up competitiveness for the future. This project combines new technologies and detailed working and service procedures which are designed to create maximum satisfaction for customers.

**Organisational Strategy ➔ IT**
- In the banking business, IT is playing a key role for the Bank in achieving its success, especially in the current highly competitive environment that includes global players with higher capabilities in IT.
- Other supportive work also progressed on IT improvements, including the design of a secure IT infrastructure for innovative products and services.
- To facilitate efficient business operations, the bank has preceded with ongoing development of support programs in the areas of human resources, IT and risk management tools.
- All the IT developments are aimed at better meeting Bank’s business needs, enhancing competitiveness, as well as facilitating swifter development of new and more complex products.

**Organisational Strategy ➔ Organisational Structure**
- In 2000, Bank developed eight strategic programs to restructure operations for improved efficiency and flexibility required for a modern banking business.
- Bank’s direct sales teams have been restructured to provide efficient services to all groups of customers.
- Centralised back office operations benefited Bank through site staff reductions of 339 persons (38%) while service levels have also become more efficient and standardised.

**Organisational Strategy ➔ Organisational culture**
- 2005 was a year of broad scope business for Thai banks, and accelerated development in human resources to cope with greater competition due financial liberalisation.
- Bank aimed to implement a Human Resources Management Development (HRMD) program to address the rapidly changing market environment.

**Organisational Strategy ➔ Initiation and adoption through competition**
- Organisational policy provided a direction in cost saving for Bank to follow. If Bank didn’t set a clear policy, it would be difficult to get a high staff response.
- The reason for the ABC implementation is due to Bank’s perceived need to improve its working efficiency by using accurate cost information.

**Organisational Strategy ➔ Design**
- The ABC team designed its costing model based on Bank’s business strategies.
- Increasing customer segments also affects the ABC application. The Interviewee 3-Bank gave an example that the bank wanted to develop another customer segment last year. The ABC team began this process by verifying the criteria of the new segment in order to set up the application to allocate its costs. The ABC team discovered that the system performed slower than the needs of the business environment. The product manager wanted the costing reports for the new segment but the data warehouse couldn’t provide the team with the data to run on the
ABC application. The ABC team had to prepare data manually and prepare the reports before the Bank announced the new product to customers. After a month, the data warehouse completed the process which included data from the new segment.

| National Culture → Organisational Culture | - Thai organisational culture is not as rigid as the Western style. Staff behaviour of Bank is more flexible than its Western counterparts. As with the rest of Thai culture, staff depends on each other. Bank needs more time to let its staff get used to the ABC system. If Bank evaluates staff takes that into consideration then, its staff will accept ABC without argument. Moreover, the ABC team encourages its staff work with other teams. | - Interviewee 2-Bank |
| Organisational Culture → Design | - Some staff weren’t concerned about the implementation because they thought it didn’t relate to their work. The ABC team attempted to communicate with top managers first about cost management objectives. The ABC team asked top management to participate in the project. The team recommended that top managers would discuss ABC with their staff, and then send their representatives to join a working group. The ABC team believed that everyone understood and believed organisational benefits were the main objective. | - Interviewee 1-Bank |
| Organisational Structure → Design | - The director of the ABC team discussed the project with directors from other departments. Then, directors of each department communicated with their staff. After that, everyone knew that they had to work together. All staff agreed to work as a team. Top management also made an effort to ensure the successful implementation of ABC.  
- Each department supports each other. The department which has the cost object received costs from other departments and both have to agree that the costs are accurate. The front desk is responsible for the accuracy of the cost information which is received from the business unit. If the costs are inaccurate, the front desk will advise the business unit. Sometimes, the company changes its organisational structure and this affects the costing model. For example, some departments acquire different responsibilities and the cost structure changes to reflect this. The staff from the department which is responsible for the cost will review the model, and then report to its manager. If the model is accurate, the manager will approve it. Annual costing revision is based on the consensus of the analyst, the developer and the business unit. | - Interviewee 2-Bank |
| IT → Design | - The development of a new chart of accounts for the Bank’s groups and a single bank-wide General Ledger System that integrates with other core systems.  
- At the beginning of the ABC implementation, Bank restructured the chart of accounts for the year by using the services of Deloitte. The old chart of accounts was not accurate enough and therefore did not represent the current financial health of the bank. For example, in the old chart of accounts, all types of loans were grouped in the ‘Loan in Baht’ account. However, in the new chart of accounts the ‘Loan in Baht’ account had sub-accounts based on types of loans, such as home loans, commercial loans and staff loans. These categories were reflected in the implementation of ABC. Deloitte co-operate with an Oracle company and it developed the ABC concept in consultation with Bank. Then, Bank used that concept to implement ABC with Oracle.  
- Bank bought Oracle General Ledger and the ABC application as a package.  
- In the banking business, IT is playing a key role and especially in terms of Bank achieving success. The banking sector is a highly competitive environment that includes global players with high capabilities in IT. Bank will | - Annual report 2005, p18 |
| - Interviewee 3-Bank |
| - Annual report 2002, p53 |
benefit from process improvements and greater efficiency as a result of implementing new methodologies, as well as improved cost control and budgetary management. This will also allow the organisation to concentrate on its core business, and not be distracted by non-core activities.

- The ABC team didn’t have any problems working with Oracle. The challenges the ABC team met were with the improvement of the IT system. At the time Bank changed its IT system to include data warehousing.

**Organisational culture → Implementation**

- It is not as strict as the Western style. Staff behaviour in Bank is based more on compromise than its Western counterparts. As with original Thai culture, staff members mutually depend on each other. Bank needs more time to let its staff get used to the ABC system and the way the Company evaluates staff has to take that into consideration. Then, its staff will accept ABC without conflict. Moreover, the ABC team encourages staff to work with it because then, all employees will become aware of the high costs that have to be managed. Therefore, the success of the ABC system depends on all staff in Bank.

**IT → Implementation**

- Bank bought new cost software from ‘Oracle’ to replace the old system. The ABC team needed to transmit cost drivers and input information from the old system into the new system.
- The ABC team didn’t have any problems working with Oracle. The challenges the ABC team met were with the improvement of the IT system. At the time Bank changed its IT system to include data warehousing.

**Organisational Strategy → Use of Information**

- Bank uses information for internal monitoring. The analyst uses the information for pricing. For example, the analyst uses the cost structure of the old product as the basis for the cost structure of the new product. After that, the analyst will do a cost projection for the new product. The analyst uses ABC to determine if the new product will be profitable or not. It separated the cost into 2 categories which are core activity (cost of goods sold) and sustainable activity (selling and administrative costs). Firstly, the analyst focuses on the gross profit from the core activity, and then it focuses on the net profit from the sustainable activity.
- Moreover, at the moment the analyst uses ABC to analyse the profitability of each customer. The product manager has never known the full cost of the product. He knows only the cost which is related to the product in his department. The costs from other departments will be assigned to the product such as the costs from debt collection and the call centre. The analyst also uses ABC to select projects which maximise profit and high customer satisfaction. For example, a few years ago, Bank had two alternatives: one was to keep its customers by retaining niche market but expensive products or to abandon that business and sell it to another company. If Bank wants to keep customers, it has to be responsible for all related costs and use ABC to calculate them. On the other hand, if Bank wants to sell businesses, the costs include only those of the core activities. In which case, the analyst compares the profit and loss of both alternatives. Then, it sends the report to Top management and it makes decisions about the future.

**Organisational culture → Use of Information**

- The ABC system is selective in terms of the amount of information it provides. For example, staff at the upper level of management can access more information than staff at the lower level. Staff at the business unit does not know all the related costs of each product. Sometimes conflict occurs over the perception regarding the accuracy of the information received by business unit staff. The information the system provides is accurate but
unfortunately, the staff in the business unit do not believe this. Staff are paid a base salary which is increased through a performance bonus if they work within budget parameters. If the system demonstrates there is a cost blowout then, the staff are dissatisfied because they will not receive a bonus.
**APPENDIX F**

The evidence describing relationships between identified factors influencing the process of ABB implementation by Oil Company

<table>
<thead>
<tr>
<th>The relationships</th>
<th>The Evidence</th>
<th>Sources</th>
</tr>
</thead>
</table>
| Economy, natural disasters, political conflicts in the Middle East, currency → oil price and oil demand outside the country | - Due to the fluctuation of crude oil prices, the political tension in the Middle East resulted in a higher price for crude oil transportation and this impacted on oil procurement.  
- Oil faced the highest fluctuations in oil prices in 20 years of business operations due to the rise in demand for oil especially from China and the US. Oil production almost reached full capacity during the unrest in the Middle East and the hurricane in the Gulf of Mexico.  
- The oil price rose continually because of the world increase in oil consumption, political conflicts in the Middle East, natural disasters and currency fluctuations (Baht against USD).  
- In 2008, the world confronted the worst economic crisis and this began in the United States.  
- Increasing demand for heating fuel (because of exceptionally cold weather) and the recovery of many European countries from debt problems bolstered investors’ confidence in global economic expansion. As a result, global oil prices gradually increased which caused domestic oil price volatility. | - Annual report 2004, p2  
- Annual report 2005, p2 & 6  
- Annual report 2006, p6  
- Annual report 2008, p11  
- Annual report 2010, p13 |
| Economy, natural disasters, political conflicts in the Middle East, currency → Oil price and oil demand in Thailand | - The Thai economy had recovered due to industrial growth. In the oil sector, consumption increased due to the growth of the economy.  
- The domestic demand for oil increased by the 4th quarter of 2003 by 17.7% across major Thai oil companies. Their combined oil refining volume increased from 75,000 to 90,000 barrels per day.  
- Major factors influencing the Oil’s performance were the Thai economy, oil pricing and the US currency.  
- The Thai economy was expected to expand further, which would result in a rise in the domestic demand of oil.  
- Because of a rising oil prices, some industrial factories turned to alternative energy, as a means of decreasing the demand for fuel oil. The oil price competition in this market was highly competitive.  
- The Thai economy had to deal with both the effects of this crisis and intense political conflicts throughout the country resulting in the decrease of oil demand in Thailand (oil price, economic crisis, and the use of various alternative fuels). The petroleum industry experienced inventory loss and lower domestic sales. | - Annual report 2002, p2  
- Annual report 2003, p3  
- Annual report 2004, p69  
- Annual report 2004, p69  
- Annual report 2006, p9  
- Annual report 2008, p11 |
| Oil price outside country → Oil price inside country                               | - Oil procured crude oil 1-2 months in advance. The types of oil, the month of delivery and the price calculation method were based on the benchmark crude oil price in the month of delivery.  
- The finished product sale price is based on the average price of finished products in Singapore at the point of sale. | - Annual report 2003, p34  
- Annual report 2003, p34 |
<p>| Oil price inside country → oil demand in TH                                      | - The rapid increase in oil prices affected marketing margins at a low level and slowed down the demand for oil consumption. | - Annual report 2009, p15 |</p>
<table>
<thead>
<tr>
<th>Topic</th>
<th>Sentence</th>
<th>Source/Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic natural disasters, political conflicts in the Middle East, currency and oil price &amp; demand → Environmental concerns</td>
<td>Although Thailand’s economic growth slowed, the domestic demand for oil grew because of a drop in price.</td>
<td>Annual report 2009, p22</td>
</tr>
<tr>
<td>Oil Price &amp; Demand → Competition</td>
<td>Because of the rising oil price, some industrial factories turned to alternative energy which resulted in a decreasing demand for fuel oil. The oil price competition in this market was highly competitive.</td>
<td>Annual report 2006, p9</td>
</tr>
<tr>
<td>Oil demand/Oil Price and Environmental concerns → Government</td>
<td>Thailand’s economy had to adjust to the impacts of the Tsunami, the effects of widespread bird flu and unrest in the South all of which had an impact on the public and industry. Oil cannot set its own price as every oil company sells oil at the same price. Oil has had to develop its service stations to satisfy customers’ needs.</td>
<td>Annual report 2005, p2</td>
</tr>
<tr>
<td>Oil demand/Oil Price and Environmental concerns → Government</td>
<td>Government launched a campaign to encourage Thai people to use and buy Thai product in order to stimulate the economy. Oil produced a handbook of oil saving measures for customers.</td>
<td>Annual report 2003, p2</td>
</tr>
<tr>
<td>Environmental concerns → Competition</td>
<td>Because of the rising oil price, some industrial factories turned to alternative energy and this resulted in a decrease in the demand for fuel oil. Oil price competition in this market was highly competitive.</td>
<td>Annual report 2006, p9</td>
</tr>
<tr>
<td>Environmental concerns → Oil production technology</td>
<td>A gasohol blending system was installed to facilitate the increase in gasohol sales at service stations. Oil built a Green refinery which includes UOP’s Hydrocracking Complex refinery system from the United States which helps generate clean diesel and benzene, upgrades competency, creates higher business returns and contributes to a sustainable economy for Thailand. Oil initiated a project for using natural gas as refinery fuel to replace low-sulphur bunker oil in order to cut production costs and develop more environmentally friendly processes. Since 2006, Oil has utilised used vegetable cooking oil as a raw material in the production of biodiesel. This innovation is aimed at reducing the health problems of Thai people that are associated with repeated use of the same oil for cooking such as gastric conditions and possible cancers. This innovation also deals with the environmental problem caused from the disposal of used cooking oil into the public sewage system.</td>
<td>Annual report 2002, p5</td>
</tr>
<tr>
<td>Government → Oil production Technology</td>
<td>A gasohol blending system was installed to facilitate the increase of gasohol sales at service stations. Now, Oil uses sophisticated technology to measure the level of sulfur in fuel oil in response to the Government’s policy.</td>
<td>Annual report 2002, p5</td>
</tr>
<tr>
<td>Government → Competition</td>
<td>The Government launched a campaign for energy saving, the use of alternative energy and the purchase of Thai products. These strategies increased the consumption of alternative energy in the oil market.</td>
<td>Annual report 2003, p9</td>
</tr>
<tr>
<td>Competition → Oil production Technology</td>
<td>Oil’s refinery is described as ‘simple refinery’. It can separate out the different elements of oil but cannot produce high quality fuel oil as a Complex Refinery’ can. Oil’s competitors have ‘Complex Refineries’”. A Simple Refinery consumes less in expenditure in chemicals, maintenance costs and energies, for example. To improve the efficiency of the refinery to increase production yield and save energy in the production</td>
<td>Annual report 2004, p41</td>
</tr>
<tr>
<td>Process</td>
<td>Oil upgraded and developed its IT system to cater for business expansion and competition and increase efficiency. This is reflected in the speed and accuracy of the database connection and working systems of the Company.</td>
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</tr>
<tr>
<td>Oil Price &amp; Demand</td>
<td>To focus on selling gasohol and biodiesel in order to comply with Government policy and the impact of rising oil prices. To export bunker oil to China and Japan to replace the decreasing demand from EGAT in power generation. Due to the high price of oil, EGAT replaced fuel oil with alternative energy.</td>
<td></td>
</tr>
<tr>
<td>Government</td>
<td>Produce products in response to the environmental policy of the Government. The Government’s regulations prohibit selling fuel oil with 3% sulfur in some areas. To develop the quality of clean products. Diesel oil can reduce air pollution. To expand the retail and industrial markets by launching the “We Thais Buy OIL” campaign which was part of the Government’s policy to encourage Thai people to use and buy Thai products in order to stimulate the economy. To develop high quality products which are environmentally friendly. Oil became a renewable energy leader by consistently expanding sales of Gasohol 95 and 91 and Biodiesel which helped support the Government’s policy. To keep developing alternative energy such as gasohol and biodiesel which are encouraged and researched by His Majesty the King.</td>
<td></td>
</tr>
<tr>
<td>Competition</td>
<td>The competition in the service-station market is highly competitive. To develop quality services at service stations and convenience stores.</td>
<td></td>
</tr>
<tr>
<td>Technology</td>
<td>To improve the efficiency of the refinery in order to increase production yield and energy saving in the production process. Green refinery includes UOP’s Hydrocracking Complex refinery system from the United States which helps generate a greater amount of clean diesel and benzene, upgrades competency, creates higher business returns and contributes to Thailand’s sustainable economy.</td>
<td></td>
</tr>
<tr>
<td>Organisational Strategy</td>
<td>A company strategy is to develop new high quality products that are environmentally friendly. To expand clean and environmental energy businesses as a commitment to environmentally and socially responsible policies.</td>
<td></td>
</tr>
<tr>
<td>Organisational Strategy</td>
<td>To upgrade and develop IT systems that would result in more efficient cost management and expenditure reduction and working time. These would be achieved through installing SAP IS Oil &amp; Gas Solution for sales, debtors and transport. This system is widely utilised by domestic and international leading oil companies. To develop the IT system by installing e-Payroll, E-Document Workflow and E-Procurement. These systems enable smooth communication and integrate data used by the whole system to facilitate increased work efficiency and transparency.</td>
<td></td>
</tr>
<tr>
<td>Organisational Strategy</td>
<td>Oil applied Activity Based Budgeting to monitor and control expenditure associated with progress or success.</td>
<td></td>
</tr>
<tr>
<td>Topic</td>
<td>Description</td>
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<td></td>
</tr>
<tr>
<td><strong>Initiation and adoption</strong> levels in order to achieve greater efficiency and effectiveness in financial management and control.</td>
<td>- Because of the fluctuation of oil prices, Oil focused on effective management which led to the efficient procurement of crude oil and cost management. - Annual report 2005, p2</td>
<td></td>
</tr>
<tr>
<td><strong>Organisational Strategy -&gt; Design</strong></td>
<td>- The budgeting team asked related departments to separate environmental costs and add those costs directly to the cost centre for environmental protection in the SAP system. - Now, each business needs to set how much EBITDA it wants to have at the end of the year, and then consider which activities it needs to undertake to reach the expected EBITDA (or prepare a budget). - Interviewee 3-Oil</td>
<td></td>
</tr>
<tr>
<td><strong>Organisational Strategy -&gt; Use of Information</strong></td>
<td>- As described in the Oil’s sustainability report, it has formulated environmental cost accounting as parts of the EMA in order to make decisions and reduce costs of comply with environmental laws and regulations. - For logistics, ABC would be used for estimating and selecting a transportation process. ‘If we will select rockets as transport, we need to know how many types of rocket and what activities are included in each type of rocket”. ABC will help select the best transportation system which can enable the Company to compete with others in the market. - Oil uses information about cost per product to decide which product it should produce more of. Oil uses this as strategic information. - Interviewee 3-Oil</td>
<td></td>
</tr>
<tr>
<td><strong>Organisational culture -&gt; Design and Implementation</strong></td>
<td>- If there is no information in the database, they will find out by discussing to the plants or learning by themselves. - Interviewee 1-Oil</td>
<td></td>
</tr>
<tr>
<td><strong>Organisational culture -&gt; Use of Information</strong></td>
<td>- As strong organisational culture described in Section 7.3.5, employees use ABB to achieve organisational strategy. - Annual report 2002-2010</td>
<td></td>
</tr>
<tr>
<td><strong>Organisation structure -&gt; Design and Implementation</strong></td>
<td>- We prepare information based on our top management’s need. (Mechanism) - We have a meeting for setting the expected EBITDA for the next operating year between Refinery and Marketing … After that, budgets were proposed to the board for approval. - After meeting, each department identifies its own activities. (Organism) - Interviewee 1-Oil</td>
<td></td>
</tr>
<tr>
<td><strong>IT -&gt; Design, Implementation and Use of information</strong></td>
<td>- We also get information from our e-Library for designing and preparing our budgets. - We use information from SAP for analysing and mapping in the information system. A good information system will convert the operation parameter linking to the economic parameter by comparing these two parameters. We fill expense information from SAP into our separated spread sheet to find how much variable costs of each activity, which costs are consumed by logistic or operating process. - Oil believes that SAP can provide real time and accurate cost information which can enhance the efficiency of budgeting preparation and the effectiveness of decision-making. - Interviewee 2-Oil</td>
<td></td>
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