BUSINESS PROCESS IMPROVEMENT METHODOLOGY ADOPTION FOR IMPROVING SERVICE QUALITY:

CASE STUDIES OF FINANCIAL INSTITUTIONS IN THAILAND

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Thesis submitted to the University of Nottingham for the degree of Doctor of Philosophy

June 2010

ABSTRACT

To stay competitive and sustain long-term profitability, Business Process Improvement (BPI) methodologies have become strategically important for financial institutions in recent years. These include well-known approaches such as Total Quality Management (TQM), Business Process Reengineering (BPR), Six Sigma and Lean. The customer-focused themes of BPI should be of particular interest to service practitioners, in order to achieve both process excellence and superlative customer service. The adoption of BPI in the financial services sector, however, still appears to be at an early stage. There is limited empirical research reported in the academic literature. This research therefore explored the existing phenomena of BPI adoption through case studies, carried out in leading Thai financial institutions.

The study was carried out in three main phases, following a literature review of BPI and service quality issues, which provided the initial theory context. First, three case companies were investigated to find out how the financial institutions introduced BPI, and conducted BPI projects. The resulting insights helped to develop a theory model that aimed to provide understanding of the outcomes of BPI initiatives, in this context. The second research phase refined and validated the proposed theory model, aiming to elevate the conceptual level of the findings. The empirical data was analysed, by iterating between observed evidence and the literature, also using experts' comments and suggestions. In the final phase, the key relationships in the evolving theory model were established and verified, employing further empirical evidence from revisiting the case studies, specifically focusing on four important areas of financial services. A final theory model was proposed, and in a further development aimed at practitioners, this model was used as the basis for a proposed BPI evaluation framework, taking account of current performance measurement approaches.

This research contributes to knowledge in the area of quality management, in particular to BPI methodology and service quality for the financial services sector, but potentially also in a broader context. The main contribution is the development of a theory model to explain how financial institutions adopt BPI methodology for improving service quality, providing a better understanding for managers in accurate targeting of the

operations process to be improved, through BPI adoption. The model also provides a constructive foundation for further development of a practical BPI evaluation framework, at the project level. The proposed theory model is, therefore, considered a basis for further empirical work, both qualitative and quantitative, relating to the BPI in the services context.

ACKNOWLEDGEMENT

First and foremost, I would like to take this opportunity to express my deep and sincere gratitude to my respected supervisor, Dr. James Tannock, for all his dedication, guidance, assistance, encouragement, and generous support. He was consistently understanding and helpful throughout my Ph.D. study. I owe him my deepest thanks and appreciation for all his thoughtful supervision.

I would like to thank Dr. Mike Byrne, Dr. Jane Guinery, and Professor Roger Maull for their valuable comments and suggestions regarding the annual review, transfer panel, and viva voce sessions. My thanks also go to all academics and administrative staff in the Nottingham University Business School, who have provided kindly support during my Ph.D. programme.

I would like to acknowledge the three collaborating case study companies. My special thanks are also offered to: Ms. Ongorn Abhakorn, Ms. Sirintip Junsawad, Ms. Naruwan Luepromchai, Dr. Piyawat Jirapongsuwan, Dr. Preeprem Nontaleelak, and other interviewees whom I may not mention here, who have provided me with time and information during the data collection process. I am also thankful to all key experts who have given me suggestions with their professional knowledge and experience.

I would like to express my gratitude to the University of the Thai Chamber of Commerce, who provided me with the scholarship to pursue my Ph.D. study. Many thanks go to all of my friends in the University of Nottingham for friendship and robust support. Many thanks also go to Ann Wright for her help in proofreading my thesis.

Last but not least, I would like to express my deepest gratitude to my family for their unconditional love, encouragement, and entire support along my Ph.D. journey. Dad, your advice inspired me to achieve my dream. Grand mom, you are always in my mind. Pearl, you are my best sister. My special gratitude goes to my mom, for always being there for me and helping me to get through the hardest moments. Mom, you are the guiding light in my life, your support and endless love are the greatest motivation to complete this Ph.D. thesis.

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LIST OF ABBREVIATIONS

5S	Seiri (sort), Seiton (straighten), Seiso (shine/sweep), Seiketsu (standardise), Shitsuke (sustain)
7QC	Histograms, Cause and Effect Diagram, Check Sheets, Pareto Diagrams, Graphs, Control Charts and Scatter Diagrams
ABC	Activity Based Costing
ANOVA	Analysis of Variance
ATM	Automated Teller Machine
BOT	Bank of Thailand
BPI	Business Process Improvement
BPM	Business Process Management
BPMS	Business Process Measurement System
BPR	Business Process Reengineering
BSC	The Balanced Scorecard
BT	British Telecom
CAP	Change Acceleration Process
CEO	Chief Executive Officer
CPMO	Change Programme Management Officer
CPSC	Change Programme Steering Committee
CRM	Customer Relationship Management
CTQ	Critical to Quality
DFSS	Design for Six Sigma
DMAIC	Define, Measure, Analyse, Improve, Control
DOE	Design of Experiments
DPMO	Defects per Million Opportunities
ECSI	European Customer Satisfaction Index
EFQM	European Foundation for Quality Management
FMEA	Failure Mode and Effects Analysis
FSQ	Functional Service Quality
FTE	Full Time Equivalent
GDP	Gross Domestic Product
GE	General Electric

IHIP	Intangibility, Heterogeneity, Inseparability, Perishability
ISO	International Organisation of Standardisation
IT	Information Technology
JIT	Just-in-Time
MB	Million Baht (Thai currency)
MBB	Master Black Belt
MBNQA	Malcolm Baldrige National Quality Award
MS	Microsoft
NPI	New Product Introduction
NPL	Non-Performing Loan
NPS	Net Promoter Score
OM	Operations Management
PDCA	Plan, Do, Check, Act
PDI	Power Distance Index
PZB	Parasuraman, Zeithaml, and Berry
QFD	Quality Function Deployment
QI	Quality Improvement
ROE	Return on Equity
ROQ	Return on Quality
SME	Small and Medium Enterprise
SMED	Single Minute Exchange of Die
SPC	Service Profit Chain
TOC	Theory of Constraints
TPM	Total Productive Maintenance
TQM	Total Quality Management
TSQ	Technical Service Quality
VOC	Voice of Customer
VOE	Voice of Employee
WIP	Work in Process

CHAPTER 1
INTRODUCTION

This chapter provides an overview of the research. Section 1.1 introduces the background and importance of the study. The research scope is identified in Section 1.2. Section 1.3 presents the research aims, questions and objectives. The structure of the thesis is outlined in the final section.

1.1 BACKGROUND

Over the last several decades, the financial services sector has played an important role in the Thai economy. As of 2008, the total assets of the Thai financial sector amounted to Baht 14,924 billion, the equivalent to 175.9% of the gross domestic product (GDP) in Thailand (Fiechter and Gobat, 2008). After the Asian financial crisis in 1997, the competitive environment in the Thai financial sector increased drastically, especially due to the entrance of foreign banks. The 1997 crisis made it necessary for financial institutions to adapt and develop in almost every dimension of their operations, such as business structure, distribution channels, sales and service, etc. (Nakornthab, 2007). Particularly in term of sales and service, the financial institutions have increased the importance of a customer-focused approach for delivering customers with the highest value services, responding to their demands and increasing expectations. The quality of Thai financial services has been generally regarded as improving, creating new value for customers. Considered as a salient way to stay competitive and sustain long term profitability, various Business Process Improvement (BPI) methodologies have also been widely adopted in Thai financial institutions, aiming to improve efficiency, reduce operating cost, and deliver world-class services to customers.

BPI methodologies have become strategically important for the organisation (Harrington, 1991; Hammer, 2002; Snee, 2004). These include well-known approaches such as Total Quality Management (TQM), Business Process Reengineering (BPR), Six Sigma, and Lean. Regardless of the emergent themes and terms used, the underlying essence of BPI is to improve the quality of process and service in a customer-focused scheme for achieving and sustaining operational and service excellence. BPI

methodologies have long been rooted and adopted successfully in the manufacturing industry; but more recently have spread widely in the service sector (Antony *et al.*, 2006). Financial and healthcare services are two important service sector areas that have adopted BPI as a strategic initiative (Hammer and Goding, 2001; Hoerl, 2004). A number of academic papers have asserted that BPI methodologies can be suitably transferred to the service sector with minor adjustment and adaptation (e.g. Bowen and Youngdahl, 1998; Jones *et al.*, 1999; Does *et al.*, 2002; Prajogo, 2005). The adoption of BPI in the service sector, however, still appears to be in the early stages. This is a challenge for both practitioner and researcher in understanding the application of BPI methodologies, pertinent to the specific service settings.

An increasing number of papers have attempted to broaden understanding of BPI in the service context. The majority concentrate on a customer-focused approach to BPI, which is inherently attractive for service companies with the aim of enhancing customer satisfaction. Some recent articles have focused specifically on understanding the implementation of BPI in financial services (Knights and McCabe, 1997; Allway and Corbett, 2002; Swank, 2003). Additionally, researchers have empirically examined and identified critical success (and failure) factors, considering also significance for practitioners, aiming to the effectiveness of BPI adoption in the financial sector (Larsen and Myers, 1997; Al-Marri *et al.*, 2007). Even though there is a growing body of literature in this area, the academic research related to BPI methodology adoption in financial services is still quite limited, and has tended to lack consideration of 'softer' aspects, such as service employees and customer perspectives. The author considered this an important issue which has not been rationally addressed in the BPI literature, signifying an opportunity to broaden understanding towards service quality principles.

Service quality has become a prominent approach in enhancing competitiveness, reflected in a wide range of improvement initiatives adopted within service organisations (Newman *et al.*, 1998). When aiming to satisfy customers, the improvement of service quality is increasingly important, particularly in high customer-contact services such as the financial institution. This suggested a question, 'how could a BPI initiative help to improve the overall service quality in order to enhance customer satisfaction?', which has not been fully addressed or answered in the literature. This involves understanding the linkage of BPI towards the customer dimension, hence

assisting managers to decide on the operations processes to be improved, and to plan effective BPI projects.

Although key scholars have suggested the importance of service quality as a prerequisite for satisfying customers (Churchill and Surprenant, 1982; Cronin and Taylor, 1992; Anderson and Sullivan, 1993; Rust and Oliver, 1994), the linkage between BPI and customer satisfaction in the literature remains unclear. A number of studies have attempted to examine this relationship (e.g. Crosby, 1991; Boaden and Dale, 1993; Mehra and Ranganathan, 2008), but the findings have not provided a complete understanding of the key causal relationships. This suggests a need for empirical research to explore the relationships between BPI initiatives and customer satisfaction, considering the importance of service quality principles.

Existing service quality improvement frameworks such as the service profit chain (Heskett *et al.*, 1994) and Return on Quality (ROQ) model (Rust, Zahorik, and Keiningham, 1995), provide a good foundation for understanding the impact of improvement initiatives towards various dimensions. Heskett *et al.* (1994) developed a simple linear conceptual model that establishes relationships between profitability, customer loyalty, and employee satisfaction, loyalty, and productivity. Rust *et al.* (1995) examined the links between service quality, customer satisfaction and retention, and profitability, providing a more complex framework for measuring the financial impact of quality improvements. Both these models focus upon the business effects of service quality improvement, rather than the process of implementation for BPI initiatives and projects. The author, therefore, considers that this area requires further development through empirical research, considering particularly the important aspect of interpreting such high-level generic service quality models in the operational contexts of BPI introduction and individual improvement initiatives. Thus there appeared to be a need for further exploratory study of these contexts, to develop a theory model which can also provide a practical approach to relating outcomes of BPI initiatives to customer satisfaction.

In typical business practice, much of the emphasis in BPI adoption has been on efficiency improvement and cost reduction, relatively little in enhancing the quality of service to satisfy customers. Accordingly, the outcomes of initiatives and projects were

typically measured based on process (e.g. cycle time, non-value added), and cost considerations (Flynn *et al.*, 1994; Yasin and Alavi, 2007). The absence of a systematic and rigorous framework to evaluate the outcomes of BPI initiatives, especially from the customer perspective, is unhelpful for practitioners. Better understanding of the way in which BPI methodologies help to improve service quality would provide valuable guidance in: 1) assessing BPI outcomes from the customer perspective, and 2) facilitating operational managers to specify improvement areas that directly impact on customers' needs and expectations. These would help in encouraging and sustaining the improvement efforts within a service organisation, which has been claimed to be declining in importance after the first initial successes gained (Basu and Wright, 2004).

There are many service industries in which such research would be of interest. The author had a work background in the Thai financial service sector, and this seemed an appropriate area in which to conduct the research. Overall, financial services have emerged as a new wave of BPI application (Antony, 2004a; Hoerl, 2004; Antony *et al.*, 2007). This approach is becoming popular in business practice, especially in developing and newly-industrialised economies such as Thailand. The successful adoptions of BPI in financial services such as GE, Citigroup, Bank of America and HSBC, etc., have been reported through a number of articles and books, mostly authored by practitioners and consultants (e.g. George, 2003; Harry and Schroeder, 2006; Hayler and Nichols, 2007). To date, only limited research has attempted to examine the theoretical underpinning of BPI adoption in the financial services sector. There appears to be no comprehensive existing theory or framework that aims to explain this phenomenon.

During and after the Asian financial crisis in 1997, BPI initiatives were implemented by several banks to deal with increasing competitive pressures in Thai financial services. The Thai context is also of interest, because Thailand is a newly-industrialised country, where the adoption of existing improvement approaches and management practices from developed countries is a feature of the business system. There may be interesting issues of application, compatibility and adaptation of BPI methodologies, which relate to the specific context of Thai financial services. However, while the research took place in Thailand, it is hoped that many of the findings will be more generally useful and applicable in a wider context.

Considering these research gaps together with current business practices; this research hence aimed to fill these gaps by focusing on BPI adoption in financial services at the operational level, and exploring the relationships between BPI initiatives and customer satisfaction. Better understanding of these issues will allow for more accurate targeting of the operations processes to be improved, through the adoption BPI methodologies. The research gaps will be further elaborated in Chapter 2, with reference to the literature. First, however, the scope, general aims, research question and more detailed objectives will be defined.

1.2 SCOPE OF THE RESEARCH

This research was positioned in the areas of Business Process Improvement (BPI) and Service Quality. The scope of this research is described below:

- The study focused on studying the mechanisms, outcomes and service quality implications of BPI adoption in the financial services sector, including approaches such as Six Sigma, Lean, TQM, and BPR.
- A theory model was developed in the particular context of the Thai financial services sector, where the collaborating case study companies were located. However, it is hoped that it may have more general applicability.
- Based on the theory model, a BPI evaluation framework was developed aimed at assessing BPI initiatives at the project (operational) level and was intended as a prototype for further development in practical use.

The impact of BPI initiatives on company financial performance was not addressed in this study, because of collaborating case study company policy on commercial confidentiality.

1.3 RESEARCH AIMS, QUESTIONS AND OBJECTIVES

This research aimed to explore how financial institutions adopt BPI methodologies for improving service quality, to enhance customer satisfaction. To explain this adoption, it also aimed to provide elements of theory to explain the linkages between BPI initiatives and customer satisfaction. The outcomes of this research will provide a theoretical model of BPI adoption in the financial services context, which will be positioned as a

basis for further development of a practical BPI project evaluation framework. Hence, the main research question is as follows:

> *'How should financial institutions conduct Business Process Improvement (BPI) projects for improving service quality, considering the linkages between internal process improvements and customer satisfaction?'*

In order to address this research question, five detailed research objectives were delineated as follows:

(1) To identify gaps from the literature, to establish where it is necessary to augment the theoretical foundations of BPI adoption in the financial services context.
(2) To explore how financial institutions currently conduct BPI projects and interpret their impact on improving the quality of customer service.
(3) To conceptualise, refine, and validate theory elements to be considered in understanding the linkages between BPI adoption and customer satisfaction.
(4) To develop a theory model to explain BPI adoption in the financial services sector and in particular to: i) identify the linkages between BPI and customer satisfaction; and ii) provide the basis for a project evaluation framework.
(5) To suggest a potential BPI project evaluation framework for assessing BPI projects in the financial services.

Considering the research scope, question and objectives; case study will be used as the main research strategy, specifically following the theory-building process suggested by Eisenhardt (1989). The research design is further described in Chapter 3.

1.4 STRUCTURE OF THE THESIS

This thesis is organised in seven chapters, as follows:

- Chapter 1 provides an overview of the research including: research background, scope of the research, and research aims, questions and objectives.
- Chapter 2 reviews the literature on BPI methodologies, service quality, and performance measurement systems, aiming to underpin the theoretical background of this study. The research question is proposed to address key gaps

identified. An initial conceptual framework is established to provide the research focus.

- Chapter 3 describes the research design and methodology used for achieving the research aims and objectives. The author's philosophical assumptions are discussed prior to descriptions of the research design, case study approach, and research methods for data collection and analysis. The background to the three case study companies and general information concerning these companies is provided.
- Chapter 4 presents the exploratory empirical study evidence from three in-depth case studies of Thai financial institutions. Both within-case and cross-case analysis are explained to reflect the empirical insights and theory elements. In consequence, the second research objective is addressed, and the first theory model is proposed based on these first stage empirical findings.
- Chapter 5 refines and validates the theory model, employing expert critical comments. Three sections are presented: 1) refinement of theory constructs; 2) validation of logical consequence; and 3) conceptual refinement. The third research objective is addressed before presenting the second theory model.
- Chapter 6 verifies the relationships in the theory model using empirical evidence from revisiting the case studies. Both qualitative and quantitative data is analysed and presented to confirm each relationship. The BPI evaluation framework development is described, based on identified criteria in the final theory model. Step-by-step guidelines for practitioners are described associated with the evaluation framework which is implemented using an MS Excel spreadsheet.
- Chapter 7 discusses the findings of this research and the contribution to knowledge. The limitations are indicated, leading to suggestions for future research.

CHAPTER 2
LITERATURE REVIEW

In the first chapter, the research background was briefly explained, highlighting the importance of BPI methodologies adoption in the global competitive situation. This provides an opportunity for researchers to explore and develop understanding of this phenomenon, particularly in the financial services sector which is becoming increasingly important in many national economies. This chapter will review the relevant literature to provide the theoretical foundations of the research. Three main areas of literature are considered: BPI methodologies, service quality, and performance measurement system. The review of the first two areas aims at clearly identifying the key research gaps and therefore refining the potential areas for the research question. As a result, an initial conceptual framework is established to provide the research focus. The performance measurement system literature will be employed as the theoretical background of Chapter 6.

This chapter is organised in five sections. Section 2.1 briefly outlines the underlying concepts of four key BPI methodologies: Six Sigma, Lean, TQM, and BPR. These are followed by summaries of previous research in relation to BPI adoption in the service sector, BPI implementation generally, and the evaluation of BPI. Section 2.2 reviews the seminal service quality models of 'PZB' (SERVQUAL) and Grönroos, aiming to identify the critical dimensions of service quality. The extant literature is further explored to examine the implications of linking BPI methodologies and service quality principles. Section 2.3 then presents the final research question as refined by this literature review, together with an initial conceptual framework. The performance measurement literature is provided in Section 2.4, prior to the conclusion in Section 2.5.

2.1 BUSINESS PROCESS IMPROVEMENT METHODOLOGIES

Having been widely adopted in manufacturing, BPI methodologies have emerged as a powerful strategy for improving operational effectiveness in service organisations (Hammer, 2002; Antony *et al.*, 2006). Business process improvement (BPI) was originally so named by James Harrington (Harrington, 1991), and has also been linked

with the Business Process Reengineering (BPR) approach (Hammer, 1990), from which it should be clearly distinguished. The customer-focused approach of BPI is inherently attractive for a service organisation. Hence, BPI methodologies have been widely disseminated and adopted, especially in financial services and healthcare areas (Hammer and Goding, 2001; Does *et al.*, 2002; Hoerl, 2004). In the context of this research, the author refers to BPI broadly as an improvement initiative or initiatives, adopted for improving a business process to achieve the goals of reducing cost and enhancing customer satisfaction. Four main methodologies are reviewed below, mainly focused on the two most recent initiatives: the Six Sigma and Lean concept. The older yet still extant approaches of TQM and BPR are also more briefly described, to cover all existing BPI methodologies used in the financial services sector.

2.1.1 Six Sigma

Six sigma is a BPI methodology that seeks to identify and eliminate causes of errors, defects or failures in business processes to achieve breakthrough improvements in quality, process performance, productivity and customer satisfaction (Nave, 2002; Snee, 2004; Antony, 2004a). Six Sigma was developed based on statistical thinking and methods, focusing on the reduction of process variation (Hensley and Dobie, 2005). Motorola is well recognised as the pioneer company that adopted the Six Sigma concept for reducing quality cost in the 1980s (Henderson and Evans, 2000; Antony, 2002). Subsequently, it has been adopted by many large companies such as General Electric (GE), American Express, Ford, etc. The successful implementations at Motorola and GE have been reported and benchmarked through a number of papers (e.g. Denton, 1991; Hendricks and Kelbaugh, 1998). The term Six Sigma is derived from that minimal level of variation which might, under certain conditions, achieve 3.4 defects per million opportunities (DPMO), considering a defect opportunity as a failure in the process that is significant to customers (Nonthaleerak and Hendry, 2006).

The strength of Six Sigma, as distinct from other methodologies, is a clear focus on achieving measurable and quantifiable financial returns (Antony, 2004b; 2006) Considered as a project-base, Six Sigma provides a constructive approach for measuring and analysing operational processes to determine exactly *how* and *why* defects occur, and then taking steps to address those root causes for improvement (Hammer, 2002).

Two main underlying methodologies are DMAIC and DFSS. DMAIC is an acronym of an implementation process consisting of: Define, Measure, Analyse, Improve and Control phases. The objective of each phase is summarised in Table 2.1 below. DMAIC provides a well-structured framework for solving problems by assuring correctness and effectiveness of the execution process (Hammer and Goding, 2001). DMAIC is in line with the problem-solving steps of Deming's PDCA cycle; however, it places more emphasis on integrating specific tools into each step of the method (Hoerl, 2004). A number of tools and techniques are employed during DMAIC phases such as FMEA, cause-effect diagram, statistical process control, etc. (Hoerl, 2004; Schroeder *et al.*, 2008). DFSS (Design for Six Sigma) is a powerful approach to design new products, processes and services in a cost-effective and simple manner to meet the needs and expectations of the customers, aiming to achieve by design Six Sigma quality levels (Antony, 2002; Nonthaleerak and Hendry, 2006).

Table 2.1: DMAIC method (adapted from Snee, 2004 and Hoerl, 2004)

DMAIC	Objective
Define	• To define the critical to quality (CTQ), considering VOC, VOE, business viewpoint, and stakeholders
Measure	• To identify the key internal process measures in response to the defined CTQ
Analyse	• To analyse and identify the root cause of the problem, causing the process variation
Improve	• To select an effective solution to improve the root cause of the problem
Control	• To ensure that the improved process is sustained and institutionalised after the project is completed

Six Sigma continues as one of the most successful quality improvement initiatives. Although more than 25 years old, it is nowadays still strongly increasing in importance, particularly in financial and healthcare services (Antony *et al.*, 2007). The underlying concept, which is rooted in understanding the true customer needs, makes Six Sigma appropriate for adopting in services, to enhance customer satisfaction (Schroeder *et al.*, 2008). Six Sigma appears to be more focused on providing consulting and training services, rather than studying and improving the methodology (Hoerl, 2004). Many papers and books related to Six Sigma have been published in the practitioner literature (e.g. Pande *et al.*, 2000); however, academic research seems to be lagging behind in its understanding of Six Sigma methodology (Antony, 2004b; Schroeder *et al.*, 2008). To

the author's knowledge, few academic papers have discussed applying or transferring the approach to the service sector. This calls for empirical research to develop in-depth understanding for strengthening both the theoretical and practical foundations of Six Sigma across various industries, particularly in the service context.

2.1.2 Lean

In the famous publication, 'The machine that changed the world', Womack *et al.,* (1990) highlighted the fact that manufacturing industry has tended to change from mass production to Lean production (also called Lean manufacturing). Previously, mass production introduced a large amount of unseen 'waste' along the whole length of the value chain (Kippenberger, 1997). The term 'Lean' was pioneered on the shop-floors of the Japanese automotive industry, at the Toyota Motor Company (Hines *et al.*, 2004). Besides focusing on the shop floor, Womack and Jones (1994) suggest that the Lean concept can be applied throughout the value stream to eliminate waste and to enhance value to the end customers. According to Hines *et al.* (2004), customer value can be created by reducing internal wastes and adding service features without adding cost; resulting from implementation of the Lean concept. This reflects the philosophy of Lean, that aims at improving the processes considering the most economical approach (Dahlgaard and Dahlgaard-Park, 2006).

The essence of Lean is the elimination of 'muda' or waste, and non-value added activities from processes by applying a robust set of performance change tools; emphasising operational excellence to deliver a superior value to customers (Jones *et al.*, 1999; Hines and Taylor, 2000; Womack and Jones, 2005). Eight types of wastes are addressed by Womack and Jones (1996) as follows:

- Defects refer to the mistakes which require rectification
- Over-production of goods that are not needed
- Inventories of goods awaiting processing or consumption
- Inappropriate processing steps
- Unnecessary motion (movement of employees)
- Transport of goods between processes without purpose
- Employees waiting leading to idle time
- The design of goods and services which do not meet the need of customers

The Lean concept represents a systematic approach for identifying and eliminating non-value added elements in the process, consequently pursuing perfection in delivering to customers (Anderson *et al.*, 2006). Lean provides a way to re-specify value, line up value creating actions in the best sequence, ensure that such activities are conducted without interruption, thereby all activities can be performed more effectively (Kippenberger, 1997). Several tools and techniques are applied for achieving the objective of Lean such as Kanban, Kaizen, 5S, Pull scheduling, etc. (details as Table 2.3). Specifically, value stream mapping is recognised as the core method. Hines and Rich (1997) develop the decision-making process for mapping the value stream, providing tool and techniques, to assist the Lean implementation. To achieve the goal of Lean, a company should follow five key principles, summarised in Table 2.2.

Table 2.2: Five principles of Lean thinking (source: Womack and Jones, 1996)

Lean principles	Objective
Specify value	• To identify the value from the end customers' viewpoint to meet their needs and requirements at a specific price at a specific time
Identify the value stream	• To identify all activities through the end-to-end process of product or service by considering the tree critical management tasks in business: 1) Problem-solving task - from the design to the production launch 2) Information-management task - from order-taking through detailed scheduling to delivery 3) Physical transformation task - from raw material to a finished product or service
Flow	• To create a value for the organisation such as redefining the work functions in departments and firms
Pull	• To let customer pull the product or service rather than pushing them to the ultimate customer, considering the notion 'what is ordered when it is ordered'
Perfection	• Perfection appears to be a natural outcome of the first four principles. Firms can apply both radical and incremental improvement action for pursuing perfection

The evolution of Lean is considered as the development and adaptation of the approach (e.g. within sectors, across businesses), rather than changing any fundamentals of the Lean 'design logic' (Hines *et al.*, 2004). Hence, Lean has been extended from *Lean production* to *Lean enterprise,* which focuses on delivering value from a customer's perspective and eliminating all non-value added activities along the value chain (Womack and Jones, 1994). The latest version of *Lean consumption* is considered as a customer-focused approach which aims to improve operational efficiency to provide a

value to satisfy customers' expectation of their goods and services (Womack and Jones, 2005). Recently, Lean has become one of the most important improvement initiatives that was disseminated to both manufacturing and service industries. Nevertheless, it has sometimes been questioned, regarding the limited applicability and suitability of Lean adoption in the service sector (Hines *et al.*, 2004). As with Six Sigma, academic research related to the adoption and implementation of Lean in the service sector is still at a fairly early stage, the available literature being dominated by manufacturing-related work. This calls for empirical research to understand the way in which a Lean concept could be applied to the under-researched areas, particularly in the service sector.

2.1.3 Other BPI methodologies

Besides the most recent BPI methodologies of Six Sigma and Lean, TQM and BPR are both still widely adopted as improvement strategies, but tend to play a less important role in the service sector. This section thus provides brief reviews of TQM and BPR as follows:

2.1.3.1 TQM

TQM was developed from a synthesis of similar and overlapping approaches put forward by 'quality gurus' such as Deming, Juran, Ishikawa, Feigenbaum, Taguchi and Crosby (Slack *et al.*, 2004). The most important principle of TQM is customer-focus (Dean and Bowen, 1994). The underlying theory concentrates on management of leadership, people and teamwork, and process improvement, aiming to satisfy the customers (Snee, 2004). TQM has been widely disseminated from the early 1980s as a management strategy for performance improvement in both manufacturing and service sectors (Dean and Bowen, 1994). It is viewed as a means of managing the entire organisation to excel on all dimensions of products and services which are important to customers (Chase *et al.*, 1998). The core elements of TQM can be classified as two dimensions: 'social' or 'soft' TQM and 'technical' or 'hard' TQM. Both dimensions should be interrelated and support each other for successful implementation (Bou-Llusar *et al.*, 2009). Prajogo (2005) points out that the soft aspect (e.g. leadership, customer focus, empowerment, etc.) has influenced the adoption of TQM in the service sector.

The holistic approach of TQM helps to integrate all functions to focus on the customer needs and organisational objectives through the improvement of quality, productivity, and competitiveness (Kumar *et al.*, 2008a). In this way, Mehra and Ranganathan (2008) suggest that customer satisfaction should be included as an important objective of the TQM implementation. The improvement approach of TQM is based on the Deming or PDCA (Plan-Do-Check-Act) continuous-improvement cycle (Anderson *et al.*, 2006) and the incremental Japanese improvement approach known as *Kaizen*. A number of tools and techniques are used to improve and control the operational processes such as 7QC, QFD, statistical process control, etc. (Snee, 2004; Anderson *et al.*, 2006). In order to stimulate quality improvement, three well-known quality awards have been established including: The Deming Prize, The Malcolm Baldrige National Quality Award (MBNQA) and European Foundation for Quality Management (EFQM) (Slack *et al.*, 2004). These award models and their criteria have influenced, and been influenced by, the development of TQM, particularly the seven criteria of MBNQA including: leadership, strategic planning, customer and market focus, information and analysis, human resource development, process management, and business results (Chase *et al.*, 1998). The MBNQA has become of interest as a comprehensive framework for companies in improving the competitiveness, and increasing the awareness of quality improvement efforts (Flynn and Saladin, 2001; Pannirselvam and Ferguson, 2001). The seven criteria of the model represent the underlying relationships between quality management and organisational performance. In relation to this, there are a considerable number of academic researches that attempt to link the MBNQA and organisational performance, to understand the impact of TQM implementation.

Wilson and Collier (2000) empirically tested the theory and causal performance linkages implied by the MBNQA, using structural equation modelling methods. Their statistical results provided insights into the specific directions of causation among seven categories of the framework, indicating particularly that process management affects customer satisfaction much more than it does on financial performance. Similarly, Ghosh *et al.* (2003) employed the structural equation model to test the relationships between strategic and operational quality planning implied by the MBNQA model, and their impact on performance. Their findings specifically indicated that the strategic planning is a driver of operational quality planning, thereby resulting in the positive business results. Lee *et al.* (2003) examined the impact of quality management practices

based on the MBNQA criteria on organisational quality performance, using the survey instrument administered in Korean manufacturing firms. Their study specified the importance of both human resource and process management impact on quality results. Pannirselvam and Ferguson (2001) investigated the relationships among the MBNQA using data from the Arizona Governor's Quality Award. The path analysis results confirmed the validity of MBNQA, and reflected the relationships between various aspects of management needed in improving organisational performance. In essence, all these studies support the relationships among MBNQA criteria and emphasise the adequacy of the MBNQA to substantiate the relationship between TQM practices and organisational performance.

Overall, TQM has been empirically demonstrated to be successful in terms of financial results, operating performance, quality, and customer dimensions etc. (Hendricks and Singhal, 1997; Agus, 2004; Kumar *et al.*, 2009). Nevertheless, there are some criticisms and concerns of TQM adoption related to: a lack of structured approach to improve the process, difficulties in measuring TQM outcomes, costs and length of TQM implementation, and effectiveness of TQM in service industries etc. (Hackman and Wageman, 1995; Powell, 1995; Basu and Wright, 2004; Mehra and Ranganathan, 2008).

2.1.3.2 BPR

In contrast with the incremental change concept of TQM, business process reengineering (BPR) is an improvement initiative that provides radical change of the business processes in an organisation (Hammer, 1990). Various critical ideas are applied for achieving the objective of BPR, such as Just-in-Time concepts, process flow charting, customer-focused operations, etc. (Slack *et al.*, 2004). Typically, information technologies are incorporated to enable the redesigning of processes. BPR is defined as 'the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service and speed' (Hammer and Champy, 1993, p.2). The underlying approach is the belief that the operations should be organised in end-to-end business processes to deliver value for customers, rather than focusing on the individual activity or function (Slack *et al.*, 2004). In order to achieve the objective of BPR, the

improvement team should be members from related functional units, and all the units that depend on the improved process (Hammer, 1990). Two main types of changes resulting from BPR could be viewed as incremental and radical changes (Childe *et al.*, 1994). BPR has been criticised regarding a perceived lack of concrete foundation of the implementation approach, and paying too little attention to the softer employee aspects such as change management, reward and motivation, human involvement training, etc. (Povey, 1998; Shin and Jemella, 2002).

To summarise, the underlying concepts of these four popular methodologies are all slightly different; however, the fundamental purposes in each case are the improvement of process efficiency and effectiveness, for increasing customer satisfaction, in turn achieving long term survival and profitability of the organisation. To provide a summary of comparative views of BPIs, the underlying theory, focus, approaches, and tool and techniques are summarised in Table 2.3. This is adapted from papers that have provided a comparison of BPI methodologies (e.g. Nave, 2002; Anderson *et al.*, 2006; Dahlgaard and Dahlgaard-Park, 2006). The following sections will now present key literature related to BPI adoption in services, BPI implementation, and the evaluation of BPI methodology.

Table 2.3: The comparison of BPI methodologies (adapted from Nave, 2002: Anderson *et al.*,2006; Dahlgaard and Dahlgaard-Park, 2006)

Methodologies	Six Sigma	Lean	TQM	BPR
Origin of methodologies	• The quality evolution in Japan and Motorola	• The quality evolution in Japan and Toyota production system	• The quality evolution in Japan	• The quality evolution in Japan
Underlying theory	• Reduce variation/ no defects	• Remove Waste/ non-value added in the process • Customer value driven	• Focus on customer	• Business transformation • Discontinuous thinking • Radically redesigning the end-to-end business process to add value to customers
Focus	• Problem focused, considering the CTQ • To solve the problems in the operations processes, in response to customers' requirements	• Flow focused, aiming to eliminate waste in the process for driving the perfection to customer	• Customer-focused	• End-to-end business process (cross functional)
Improvement approach/principles	• The main improvement approach follows the DMAIC methods consisting of five phases; Define, measure, analyse, improve, and control • Design For Six Sigma (DFSS) including: Define, Measure, Analyse, Design, and verify	• Identify customer value • Value stream analysis • Flow • Pull • Perfection	• The improvement approach is based on Deming or PDCA cycle (Plan-Do-Check-Act)	• Rethink business process in a cross-functional manner • Radically rethinking and redesigning the process • Have those who use the output of the process perform the process • Put the decision point where the work is performed, build control to the process
Tools/ techniques	• Statistical process control • Process Map • Measurement system • FMEA • DOE • Root cause analysis • ANOVA • Cause and effect diagram • Pareto analysis • Histogram • Benchmarking • Brainstorming	• Kanban • Pull scheduling • Kaizen • 5S • Value-Stream Mapping • Time-Value diagram • Single piece flow process • TPM • SMED	• Analytical and statistic tools • Seven quality control tools • Seven management tools • Statistical process control tools • Quality function deployment (QFD)	• Process mapping/flow charting • Benchmarking • Just-in-Time • Activity Based Costing (ABC) • Supporting IT • Simulation modeling

2.1.4 BPI methodology in the service sector

BPI methodologies have long tended to expand far beyond the manufacturing arena into the service sector. BPI methodologies have been growing strongly for service companies as an improvement strategy (Bowen and Youngdahl, 1998; Hammer and Goding, 2001; Does *et al.*, 2002; Antony, 2004a). There are a number of papers that specifically explore the extension of BPI from manufacturing to service settings. Bowen and Youngdahl (1998) discuss the transferring of Lean to service operations, revisiting the production-line approach of Levitt (1972). Prajogo (2005) empirically examined the differences between TQM implementation in manufacturing and service sectors; revealing the insignificant differences, in terms of impacts on quality performance. Does *et al.* (2002) investigated the use of Six Sigma in non-manufacturing processes, focusing on eight improvement projects in Dutch industry. Similarly, Benedetto (2003) studied an adaptation of Six Sigma for improving service activities in a film library. Lean application in the communication industry (BT) was studied by Jones *et al.* (1999), focusing on the improvement of service quality and operating costs. All these authors suggest that BPIs are suitable and readily applied to the service sector, with minor adaptation and adjustment.

BPI methodologies have been rapidly disseminated to financial and healthcare services (Antony *et al.*, 2007). The study of Hoerl (2004) suggests two main reasons why BPIs have been adopted in these areas including:

- Both financial and healthcare service operations are similar to manufacturing: flow processes with high-volume, short cycle times, etc.
- Financial and healthcare services nowadays play an important role in national economies.

BPI methodologies in financial and healthcare services have emerged as the new wave of change in BPI applications. Citibank and GE money are examples of successful financial institutions that adopted Six Sigma and Lean as improvement strategies to increase customer satisfaction (Douglas and Erwin, 2000). Similarly, the studies of Allway and Corbett (2002) and Swank (2003) illustrated the success of Lean implementations, through case studies in financial services, showing that a company can benefit both in terms of cost reduction and better service quality for the customer. Shin

and Jemella (2002) investigated the adoption of BPR in financial institutions for providing guidelines in conducting improvement projects. Resulting from the investigation of TQM adoption in financial services, Knights and McCabe (1997) revealed that a company places more emphasis on cost reduction and control, whilst paying less attention to the softer aspects that are important in measuring the success of initiatives.

Criticisms of BPI adoption in services, however, have been posited in the literature, particularly in a lack of consideration of *'soft aspects'* related to service employees, customer perspective, etc. (Knights and McCabe, 1997; Bowen and Youngdahl, 1998; Elliott, 2003). In the context of this research, the author refers to soft aspects as those outcomes of BPI initiatives, which impact on both employee and customer dimensions, including both objective and subjective attributes (e.g. perception, satisfaction). There are gaps in the literature coverage and evidence, pertaining to these soft aspects, (see below) suggesting a need for empirical research to broaden insights into BPI adoption in the service context.

2.1.5 BPI implementation

To date, the majority of academic papers related to BPI implementation are based on the manufacturing sector. Three main categories of publication can be found. First of all, there are a number of papers seeking to examine the critical success factors of BPI implementation. Coronado and Antony (2002) surveyed and prioritised the critical success factors which are necessary for an effective implementation of Six Sigma projects. Motwani (2003; 2004) examined the critical success factors involved in the implementation of Lean and Six Sigma, using a business process change framework adapted from Kettingger and Grover (1995). Achanga *et al.* (2006) present the critical success factors that constitute a successful implementation of Lean manufacturing within SMEs in the UK. Warnecke and Huser (1995), Bhasin and Burcher (2004), and Dahlgaard and Dahlgaard-Park (2006) all consider critical success factors for Lean adoption, towards the cultural implications. Al-Mashari and Zairi (1999) provide a literature review of the key success and failure factors of BPI implementation process covering multi-dimensional implications. Generally speaking, the critical factors of BPI adoption are addressed similarly by all these authors, including: leadership and top

management, financial issue, skill and expertise, organisational culture, communication, etc. It is noted that the critical factors of BPI implementation could be viewed at both organisational and operational (project) levels.

Several papers have aimed to identify the key success factors of BPI implementation in the service sector. In an earlier contribution, Larsen and Myers (1997) identified the success and failure factors of BPR specifically focusing on financial services, using in-depth case studies of BPR projects. More recently, Al-Marri *et al.* (2007) examined the critical success factors of TQM in the banking sector, focusing on the service quality dimensions. Studies by Antony *et al.* (2004a; 2007) surveyed the critical success factors of Six Sigma in a UK service organisation; identifying the linkage with organisational strategy, customer focus, management commitment, culture, and training and education; as important ingredients of successful implementation. Hensley and Dobie (2005) developed a model for assessing the readiness for Six Sigma in services, employing key success factors investigated. This type of paper aims primarily to provide pointers to enhance the effectiveness of BPI implementation; considering significant issues for practitioners whilst also adding to the scholarly literature that seemingly lags behind actual practice. It could be noted that the success factors identified for services highlight the importance of 'soft issues' (e.g. service quality, employees, service culture, etc.), which are slightly different from that of manufacturing. Nevertheless, little empirical evidence is provided relating to the consequent outcomes of BPI, particularly regarding these soft aspects.

The second category is the discussion on the integration of BPI methodologies, which helps to enhance the underlying methodology (Hoerl, 2004; Nonthaleerak and Hendry, 2006). The most vital theme of the integration, nowadays, is the collaboration between Six Sigma and Lean. George (2002) argues that applying Six Sigma alone seems to lack consideration of the improvement in lead time and does not directly address the process speed, whilst Antony *et al.* (2003) suggest that companies who are engaged in Lean methodology alone have a limitation of improvements across the organisation, because of the absence of the cultural and infrastructure of Six Sigma. These two methods are complementary, with an aim of eliminating wastes, and improving process efficiency (Basu, 2004). Nevertheless, papers in this area are mostly descriptive and conceptual.

This would be an opportunity to empirically explore insights into the integration of Lean and Six Sigma in the service context.

Additionally, some papers present an integration of Lean and Six Sigma with other methodologies. Revere (2003) demonstrates the ease of integrating Six Sigma with TQM effort, providing empirical evidence through a case study in healthcare service. Both papers of Bhasin and Burcher (2004), and Hines *et al.* (2004) elucidate the rationale for integrating Lean with other management approaches or improvement tools without contradiction to provide a higher value to customers. Additionally, Kubiak (2003) provides an idea for integrating; ISO 9000, Baldrige criteria, Six Sigma and Lean, Balance scorecard, in the organisation. At this point, Hammer (2002) argues that various improvement initiatives should be positioned under a larger context of process management; this is in line with Anderson *et al*. (2006) and Dahlgaard and Dahlgaard-Park (2006), who suggest the benefits from integrating BPI methodologies considering Six Sigma and Lean as the key road-maps, supporting the value of TQM adoption. Hence, an understanding of the way in which various BPI methodologies could be integrated to optimise the organisation's benefits leaves a critical gap for future studies.

The last category is the papers that provide a comparison of BPI methodologies. Nave (2002) compares three different process methodologies; Lean, Six Sigma and TOC, providing understandings of concepts and effects, and similarities and differences. Papers by Hoerl (2004) and Snee (2004) discussed the evolution of BPI methodology and suggest future study areas, while Basu (2004), Bendell (2006), and Anderson *et al.* (2006) reviewed recent BPI methodologies; including TQM, Six Sigma, Lean, and BPR; to identify similarities and differences, as well as the strengths and limitations of each methodology. In order to obtain an in-depth understanding of BPI implementation, the exploratory case study is deemed apposite for broadening the range of both theoretical and practical implications.

2.1.6 The evaluation of BPI methodologies

This section reviews the extant literature to broaden some ideas relating to the evaluation of BPI methodologies, considering especially the service sector. Several authors have studied the impact of BPI approaches on various dimensions of

performance, although the main focus has been on the well-established approach of TQM. Mann and Kehoe (1994) examined the effects of TQM and other BPI initiatives on business performance, aimed at assisting a company to select quality activities to solve specific problems. More recently, Kumar *et al.* (2009) investigated the impact of TQM implementation on multi-dimensional performance. These two studies reveal that improvement initiatives help in improving operational processes, employee relations, financial results, and customer satisfaction; thereby positively impacting on company performance. The survey results of Terziovski (2006), confirmed positive relationships between TQM and two operational measures: productivity improvement and customer satisfaction. Antony *et al.* (2007) suggest that the impacts of BPI initiatives are typically located in three major criteria of cost, quality and customer satisfaction.

Whilst the outcomes of BPI in manufacturing have typically emphasised cost and conformance to specification (quality) dimensions, these may not be so appropriate to the characteristics of services, due to the potential importance of softer dimensions (e.g. customer expectation, perception and satisfaction, etc.). Robinson (1998) and Antony (2004a) both argue that the evaluation of a BPI/QI project may not adequately consider these soft aspects such as responsiveness, empathy, assurance, etc., which are closely linked to customer's perception of service quality. These authors suggest that the evaluation of improvement initiatives should incorporate both the internal performance standard and external customer perceptions. Additionally, Boaden and Dale (1993) and Antony *et al.* (2007) indicate the difficulties of measuring BPI outcomes on customer satisfaction, considering the special characteristics of services (e.g. intangibility, heterogeneity, inseparability). This suggests the need for a better understanding of 1) the outcomes of BPI adoption in the particular context of the service sector and 2) causal linkages between BPI and customer satisfaction, which will be significant for developing an effective evaluation framework.

Of course, researchers over many years have studied the impact of BPI initiatives on customer satisfaction. Crosby (1991) developed a road-map to understand the linkages between improvement initiatives and customer satisfaction measurement in service firms. Boaden and Dale (1993) raised some key aspects of the measurement of quality improvement related to customer perspectives, through case studies of UK financial institutions. Flynn *et al.* (1994) highlighted the importance of measuring the

performance of quality initiatives from the customer perspective. More recently, Maddern and Maull (2007) investigated improvement initiatives in UK financial services, to develop a generic model for measuring the effectiveness of Business Process Management (BPM) for increasing customer satisfaction. Studies by Agus (2004) and by Mehra and Ranganathan (2008) empirically indicated that TQM practices strongly impact on customer satisfaction. Roth and Jackson (1995) highlighted how improvement initiatives adopted in the banking industry helped in improving both technical and functional quality aspects. Two papers by Setijono and Dahlgaard (2007; 2008), suggested that the evaluation of initiatives should involve not only costs from the provider's perspective, but also the outcomes in term of perceived customer value. There have been contrasting views: Woodall (2001) considered that the outcomes of BPI are primarily connected to the technical achievements, resulting from the improvement of internal operations; this is consistent with Lassar *et al*. (2000).

As clearly stated by Deming (1986), an improved business process should result in both lower costs and more satisfied customers. Many quality theorists and practitioners are also in agreement with the idea that quality improvement involves both cost reduction and revenue expansion through satisfying customers (Rust *et al.*, 2002). Although indicating that relationships exist, the literature on BPI evaluation to date has not provided a generic explanation of the relationship(s) and causal linkages between BPI and customer satisfaction. Whilst a number of authors postulate strong links between improvement initiatives and outcome variables relating to customer satisfaction, relatively limited empirical research addresses these relationships. Managerially, it is of interest to understand the linkages between BPI initiatives and customer satisfaction, in order to identify the internal operations process to be improved that will have the greatest impact on the customer dimension (Kordupleski *et al.*, 1993). However, there appears to be no comprehensive theory or model in the literature, which explains how to measure BPI outcomes pertaining to perspectives of service quality. The author, therefore, considered that this area could benefit from further exploratory research, considering the important aspects underlying service quality principles to help understand the outcomes of BPI adoption at the operational level (i.e. BPI project) towards customer satisfaction.

Hence, the review of literature in this section suggested the idea of developing a BPI evaluation framework for a particular context of service, considering the customer perspective (e.g. service quality, customer value, etc.), in response to the customer-focused approach of BPI adoption. In the next section, the author will explore the service quality literature, aiming to incorporate underlying service quality concepts to help develop both a theory model and an evaluation framework.

2.2 SERVICE QUALITY

Service quality becomes increasingly important for today's business, particularly in high-customer involvement industries such as financial services. It could be considered as an imperative strategy, which helps a company to attain a competitive advantage, in turn increasing long-term profitability. In financial services, the significance for improving the service quality has been noted in relation to the vulnerability of price competition (Howcroft, 1991). This has left an important agenda for companies, to understand and improve the quality of service to satisfy their customers.

Academic consideration of service quality is some decades old. According to a seminal paper by Parasuraman *et al.* (1985), three underlying themes of service quality exist:

- Service quality is more difficult for customers to evaluate than goods quality.
- Service quality perceptions result from a comparison of customer expectations with actual service performance.
- Quality evaluations are not only made on the outcomes of a service, but also involve the process of service delivery.

To date, academic research in service quality theory has been dominated by two main conceptualizations; the SERVQUAL model developed by Parasuraman *et al.* (1985) authors often referred to as 'PZB', and Grönroos' service quality model (Grönroos, 1984). These two models will be outlined to provide theoretical underpinnings, and identify critical ideas for conducting this research.

2.2.1 SERVQUAL service quality model (PZB)

Generally speaking, the mainstream of service quality research from the 'American' perspective has been based on the PZB service quality model, widely known as

SERVQUAL (Brady and Cronin, 2001). Parasuraman *et al.* (1985) conceptualized a service quality model (gap model) by investigating the service quality concept in four service categories first suggested by Lovelock (1980). SERVQUAL aims to understand how customers perceive the quality of a service. An instrument (a survey questionnaire) is used to compare what they feel the service firm should offer (expectation), and their perceptions of the performance of the actual service (Parasuraman *et al*. 1988). Boulding *et al.* (1993) noted that expectation forms the basis of a person's overall quality perception, which in turn predicts the person's intended behaviour. The SERVQUAL instrument has been refined and developed into a multiple-item scale for assessing consumer perceptions of service quality (Parasuraman *et al*., 1988; 1991). The items in SERVQUAL are grouped into five distinct dimensions including:

Tangibles:	Physical facilities, equipment, and appearance of personnel
Reliability:	Ability to perform the promised service dependably and accurately
Responsiveness:	Willingness to help customers and provide prompt service
Assurance:	Knowledge and courtesy of employees and their ability
Empathy:	Caring, individualized attention the firm provides for its customers

SERVQUAL provides a broad range of application through its expectations/perceptions format, and it is widely used within the service sector to understand the perceptions of targeted customers regarding their service needs; and to provide a measurement of the service quality of the organisation. However, SERVQUAL may also be applied internally to understand employees' perceptions of service quality, aiming at improving the quality of service.

Some authors have argued that weaknesses of SERVQUAL exist, related to the strong focus on functional quality dimensions, or the process of delivery, rather than the service outcomes (Mangold and Babakus, 1991; Baker and Lamb, 1993; Richard and Allaway, 1993; Woodall, 2001). Baker and Lamb (1993) argue that the SERVQUAL instrument was designed to measure customers' perceptions of the process-related dimension of service quality, whilst it does not address the outcome dimension. Richard and Allway (1993) also argue that model that utilise only the process quality attributes

(functional service quality), may be mis-specified and have low predictive validity. Powpaka (1996) concurs that SERVQUAL may not be sufficiently comprehensive to capture the overall service quality construct, since it focuses mainly on the process quality attributes. Woodall (2001) agrees that SERVQUAL implicitly flavours the functional quality aspects, via an assumption that the object under evaluation is inevitably characterised by IHIP features. While Zeithaml and Bitner (2003) argue that service quality pertains primarily to expressive attributes of a service product. These criticisms suggest an important gap pertaining to the under-represented measures of service outcomes, referring to 'technical quality'. This is a key theme of Grönroos' service quality model, considered in the next section.

2.2.2 Grönroos' service quality model

Grönroos (1984; 1990) proposed an influential service quality model incorporating both technical and functional quality aspects. This model includes both *how* the quality of services will be perceived by customers and in *what* way service quality is influenced. To measure service quality, expected service and perceived service are the two main variables. The three dimensions of Grönroos's service quality are technical quality, functional quality and image. This study mainly focused on the first two of these dimensions, which will be discussed as follows;

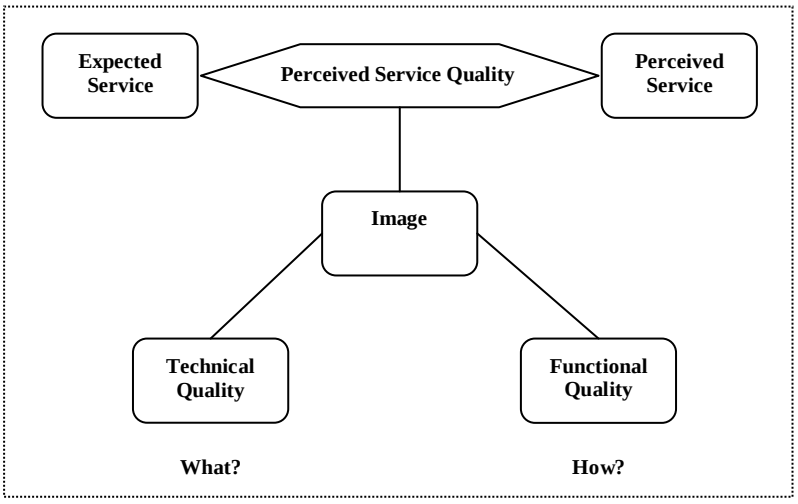

Figure 2.1: Grönroos' service quality model (1984)

2.2.2.1 Technical service quality (TSQ)

This dimension refers to an outcome of the service production process, or result of 'what' the customer received from the service transaction (Grönroos, 1984; Brady and

Cronin, 2001). TSQ is important for customer to evaluate the quality of service. In a manufactured product, technical quality can be objectively assessed, whereas TSQ in a service may be more difficult for customer to evaluate. However, Lehtinen and Lehtinen (1991) argued that the outcome of the service production process can be either tangible or intangible. The difference between ideal and achieved technical quality is used to identify the technical quality dimension (Harvey, 1998). To date, there is no underlying latent variable associated with the TSQ dimension (Richard and Allaway, 1993; Powpaka, 1996). Some scholars suggest that identifying the determinants of TSQ has generally involved the use of a qualitative method (Kang, 2006). Hence, an empirical study was deemed apposite for developing the specific measures of TSQ in the context of this research.

2.2.2.2 Functional service quality (FSQ)

The *Functional Service Quality (FSQ)* dimension refers to the quality of service process as delivered, or 'how' the customer gets the technical outcome of the service production process (Grönroos, 1984). FSQ is related to the process quality concept as later proposed by Lehtinen and Lehtinen (1991), which is based on how customers see the process and how they feel themselves fitting into it. Functional quality is a very important dimension affecting customers' perception of the quality of service (Grönroos, 1984; Parasuraman *et al.*, 1985). Resulting from pilot studies in Swedish services firms, Grönroos (1983) argued that technical quality is a necessary; but it may not be a sufficient, condition of high service quality, regardless of high functional quality. This implied that functional quality is likely to be more important to the customer-perceived service quality than technical quality (Grönroos, 1983). Silvestro and Johnston (1990) and Oberoi and Hales (1990) concur that functional quality attributes are major contributors to overall service quality as perceived by customers.

To take a further step in this contention, Saleh and Ryan (1991) report the application of the SERVQUAL model in the hospitality industry. They argue that quality of the interactive service (functional) is the expressive performance of service, which is considered more important than physical qualities (technical). In this way, the quality of functional service may even offset minor deficiencies of technical quality (Saleh and Ryan, 1991). Sweeney *et al.* (1997) empirically examined how service quality at the

point of purchase influences customer's perceptions of value and willingness to buy. Their results indicated that the perceptions of service quality during a service encounter (FSQ) had a greater influence than perceptions of product quality (TSQ) on willingness to purchase. Similarly, Brogowicz *et al.*, (1990) also argue that perceived service quality is typically influenced to a much greater degree by functional quality, rather than by technical quality dimensions (Brogowicz *et al.*, 1990, p.37). All these studies signify the importance of functional service quality, a point also argued by Grönroos (1983, 1984) and Parasuraman, Zeithaml and Berry (1985, 1988) themselves.

Despite the arguments discussed above, there are a number of studies that suggest the importance of outcome-related quality (TSQ); to comprehensively capture the customer-perceived service quality. Richard and Allway (1993) investigate and demonstrate the importance of service quality, both process and outcome quality attributes, as a predictor of actual choice behaviour. Powpaka (1996) examines the significance of outcome quality in assessing overall service quality in a sample collected from four different industries. The empirical findings indicated that outcome quality is an important determinant of overall service quality. Newman (2001) suggests that the service outcomes, the TSQ aspect, is also important to overall service quality, besides the soft dimensions of SERVQUAL. Lassar *et al.* (2000) also take that view, considering that the incorporation of TSQ aspects with the soft dimensions of SERVQUAL would more fully explain the overall customer satisfaction measurement. Additionally, Kang (2006) suggests that a two-component service quality model yields a better fit than a model concentrating on one component as SERVQUAL. All of these studies consider both TSQ and FSQ as important determinants of the overall service quality perceived by customers.

Woodall (2001) suggests that by incorporating both TSQ and FSQ of Grönroos' model, a more relevant model of service quality will be provided. He states that 'evaluations of '*reality*' will potentially have more instrumental and explanatory value than measurements of *perception*' (Woodall, 2001, p.604). The author agrees, considering that Grönroos' proposition is more appropriate to the context of this research, and hence aiming to understand the impact of BPI initiatives on service quality through considering and balancing both TSQ and FSQ dimensions. In the next section,

dimensions of service quality are discussed further, to clarify the distinction between TSQ and FSQ, suggested in the literature.

2.2.3 Service quality dimensions

Apparently, perceptions of service quality are based on multiple dimensions; however, there is no general agreement about the nature and content of service quality dimensions (Brady and Cronin, 2001). An elusive and abstract construct means service quality is difficult to define and measure (Parasuraman *et al.*, 1985; Cronin and Taylor, 1992). Various numbers of service quality dimensions are proposed including; two-dimensional (e.g. Grönroos, 1984; Lehtinen and Lehtinen, 1991), three-dimensional (e.g. Lehtinen and Lehtinen, 1991; Rust and Oliver, 1994; Brady and Cronin, 2001), and the five-dimensional SERQUAL construct. The author, however, observed that all of these require some distinction between the 'what' (service outcome) and 'how' (service process), as critical to customers' perception of the quality of service they receive.

To portray the entire picture of service quality, therefore, it is necessary to understand not only 'what' the customer gets, but also 'how' the customer gets it (Grönroos, 1984). Every service system and service action has to be conceived both in terms of ensuring technical quality, and customer perception of that quality as delivered (Harvey, 1998). It is important that service managers should understand and distinguish both aspects, as both will be perceived by ultimate customers. Nevertheless, clarity in this area has not always been easy to find, because, as suggested above, the concepts provided by leading authorities are not fully aligned. The author attempted to summarise the underlying implications of service quality, as suggested by key scholars, in Table 2.4 below.

Table 2.4: The dimension of service quality (adapted from Kang, 2006)

Literature / **Quality dimensions**	**"American perspective" Parasuraman *et al.*(1985)**	**"Nordic perspective" Grönroos (1984)**	**Lehtinen and Lehtinen (1991)**	**Rust and Oliver (1994)**
"What"	Outcome quality	Technical service quality (TSQ)	Output quality	Service product
"How"	Process quality	Functional service quality (FSQ)	Process quality	Service delivery

Since the primary aim was to examine the impact of BPI methodologies on service quality, the author considered that adopting of Grönroos' model would enrich the underlying foundation of this research. An understanding of Grönroos' service quality dimensions also assists in establishing the initial conceptual framework, described in Section 2.3. To deepen an understanding, the academic research that undertakes the view of both TSQ and FSQ will be explored in the next section.

2.2.4 Research papers on TSQ and FSQ

This section reviews important papers that were based on the Grönroos' service quality model, considering aspects of TSQ and FSQ. Research incorporating these two concepts together is generally at an early stage (Dabholkar and Overby, 2005). Much previous work pays more attention to the SERVQUAL conceptualisation; however, there are some valuable papers which incorporate TSQ and FSQ as important aspects of service quality evaluation. Hence, a review of literature in this area should suggest a useful perspective for synthesising critical ideas in the context of this research.

A number of authors have attempted to develop service quality conceptualisation based on the TSQ and FSQ dimensions. Rust and Oliver (1994) propose a three-component model; service product, service delivery, and service environment. Brady and Cronin (2001) developed a new idea for measuring service quality by incorporating previous service quality models (e.g. Grönroos, 1984; Rust and Oliver, 1984; Parasuraman *et al.*, 1985; and Dabholkar *et al.* 1996), which was tested across four service industries. Kang and James (2004) extended understanding of service quality by empirically examining the conceptualization of Grönroos's service quality model, to investigate the relationship between the TSQ and FSQ dimensions. All these papers indicated the importance of TSQ and FSQ which both impact customer perception of the overall service quality and in turn, influence the level of customer satisfaction.

Furthermore, there is some research which aims to investigate further the relationship of both TSQ and FSQ dimensions, with other attributes. Mohr and Bitner (1995) scrutinised how one aspect of the service encounter, the perceived employee effort, affects customer satisfaction. Dabholkar and Overby (2005) investigate how service process and service outcome are related to service quality and customer satisfaction

evaluation. They suggest that the process factors are closely linked to service quality, whilst the outcome factors are closely related to customer satisfaction. All these papers indicated that the integrating of TSQ and FSQ aspects helps in better capturing the overall service quality, which also provides meaningful insights relating to customer satisfaction.

Considering the aim of enhancing customer satisfaction, it is of interest that companies understand the way in which BPI initiatives help to improve both TSQ and FSQ; to ensure that customers are satisfied. Douglas and Fredendall (2004) suggested that the integration of these service quality principles would help in understanding the relationships between improvement initiatives and customer satisfaction. Both studies of Maddern *et al.* (2007) and Kumar *et al.* (2008b) provide a good insight concerning the assessment of impact of BPM on service quality and customer satisfaction in UK financial services. The findings reveal a strong causal link between BPM and TSQ, in which TSQ is critical for determining customer satisfaction; whilst staff satisfaction and service quality are also confirmed as key drivers of customer satisfaction. This study confirms studies in the financial services by Newman (2001) and Johnston (1995), which suggested the importance of both service quality dimensions (TSQ and FSQ) as critical means for enhancing customer satisfaction. The author, however, observed that there is limited academic research which examines how the BPI initiatives affect both TSQ and FSQ. This suggests a need for empirical research to develop greater understanding of this relationship.

The work described above identifies relevant implications of TSQ and FSQ, for evaluating the quality of service, considering both outcome and process, and presents causal linkages to customer satisfaction. The author considered it important to incorporate underlying concepts of TSQ and FSQ, aiming to develop better understanding of BPI impact towards customer satisfaction. The next section therefore further investigates research that has focused on various perspectives of service quality improvement, considering particularly the financial services area.

2.2.5 Service quality improvement perspectives

Considering increasing competition from alternative financial products and delivery channels, firms in financial services must strive to succeed by improving their performance with an aim of enhancing customer satisfaction (Krishnan *et al.*, 1999). The emphasis on customer satisfaction relies on the basic argument that satisfied customers tend to stay with the firm for future business, in turn achieving long-term profitability (Heskett *et al.*, 1997). Jones and Sasser (1995) considered that 'complete customer satisfaction is the key to securing customer loyalty and generating superior long-term financial performance'. As a salient way of satisfying customers, the strategic focus of the financial services sector has shifted from price to service quality (Frei *et al.*, 1999). Commonly, service quality is considered as a critical prerequisite for establishing and sustaining satisfying relationships with customers, thereby enhancing the business performance (Newman *et al.*, 1998; Lassar *et al.*, 2000).

The relationship between service quality and customer satisfaction has, naturally, been substantially studied, and become a strategic concern in the marketing literature (e.g. Churchill and Surprenant, 1982; Bolton and Drew, 1991; Cronin and Taylor, 1992; Lassar *et al.*, 2000). Extensive studies have examined the consequences of customer satisfaction on customer retention, considered as the key to business performance, revenues and profitability (e.g. Reichcheld and Sasser, 1990; Roth and Van der Velde, 1991; Rust and Zahorik, 1993). The relationship between customer retention and profits has been reported by a variety of researchers (e.g., Anderson and Sullivan, 1993; Reichheld and Sasser, 1990) and companies (Heskett *et al.* 1997).

Service quality is considered as a key driver in gaining competitive advantages in the financial services industry (Roth and Van der Velde, 1991; Collier, 1991; Soteriou and Zenios, 1999), and reflects a widespread adoption of quality improvement initiatives in this sector (Newman, 2001; Maddern and Maull, 2003). The survey of UK financial services reported by McCabe *et al.* (1997) indicated that competitive pressure to improve service quality is considered the highest priority in adopting quality initiatives. Service quality improvement is considered a crucial route in enhancing the value added to service delivery and offerings provided by financial institutions, which has also become an important attribute in satisfying customers (Heskett *et al.*, 1997; Soteriou

and Zenios, 1999). Indeed, Reichheld and Sasser (1990) asserted that improvement in service quality is not a cost but an investment in a customer who will ultimately generate long term profitability.

Ghobadian *et al.* (1994) examined the underlying concepts and discussed various service quality models, suggesting different approaches of quality improvement. Harvey (1998) also investigated a number of approaches and techniques applied for improving service quality, indicating that the service provider needs to deliver both good 'results' to customers (what customers received from the service) and good 'process' through which customers obtained service delivery. This is aligned with Edvardsson (1998), who stated that the central goal of service quality improvement is to provide the best prerequisites for well-functioning customer processes and attractive customer outcomes. Howcroft (1991) suggested that service quality improvement in financial services involves enhancement of both TSQ and FSQ, as these could be perceived simultaneously by customers. All this literature suggests that service companies need not only to focus on improving the internal process, but also consider a broader customer perspective related to both outcomes and processes of service delivered, which reflects the suggestion of Parasuraman (2002). However, Kordupleski *et al.* (1993) pointed out that quality programmes are typically focused on improving internal processes, whilst not being preoccupied enough with the external customer. It is, therefore, crucial to understand the linkage between quality improvement efforts and customer satisfaction, which is still unclear in the literature.

Research related to service quality improvement has been based in both marketing and operations (i.e. quality management) literature, but some of the most influential work has originated in marketing (e.g. Heskett *et al.*, 1994; Rust *et al.*, 1995). Despite the proliferation of interest in service quality, there appears to be an unclear connection between the operations and marketing functions, in pursuing the service improvement objective. Kordupleski *et al.* (1993) suggested that the marketing function has not shown much interest in the quality movement. If quality programmes are typically focused on internal business processes, the link between marketing (i.e. external measures) and quality (i.e. internal measures) is not natural or easy to make (Bolton and Drew, 1994). Hence, the marketing aspects of quality (e.g. perceived quality, customer satisfaction) seldom appear to be linked effectively to the quality improvement efforts.

A continuing challenge of service quality improvement programmes lies in considering both the operations and marketing sides of service quality.

However, several empirical studies have attempted to understand and establish the linkage between the operations and marketing functions. Roth and Van der Velde (1991) explored and elaborated the links between the operational measures with marketing measures of quality, using a sample of 117 retail banks. Bolton and Drew (1991) developed a multi-stage model to assess the effects of service changes on service performance level, overall service quality and service value. Collier (1991) quantitatively related customers' perception of quality to the performance criteria of the service-delivery process, using a case study of a credit card processing centre. The service quality process map developed in this study primarily aimed at focussing management's attention on how the customers perceive the service outcome and relates it to operational performance. A study by the Bank Administration Institute indicated that it is important that best in class retail banks develop both their operations and marketing capabilities simultaneously (Roth and Van der Velde, 1992 cited in Soteriou and Zenios, 1999).

These studies suggest the importance of considering and indeed integrating operations and marketing viewpoints. Kordupleski *et al.* (1993) stated that 'greater involvement by marketing in focusing quality improvement efforts can result in process improvements that deliver the customer benefits needed to capture market share'. Organisations that simultaneously pursuit both internal (i.e. operations) and external (i.e. marketing) competitive advantage tend to achieve a stronger position in highly competitive market (Flynn and Schroeder, 1995). Understanding the relationships between the operations and marketing functions should assist practitioners in adopting quality improvement efforts that directly impact on customer side, thereby increasing the profitability.

2.2.6 Two key service quality improvement models

Service quality research from the marketing side has investigated quality improvement aspects, although this is typically a distinct theme in the literature, separate from studies of BPI in the operational context. Reviewing this division, the author identified a gap in the literature, when considering the value and applicability of the 'marketing-originated'

service quality models in an operational context – specifically BPI adoption and individual improvement initiatives. To illustrate this point, it is instructive to examine two leading service quality models, and show how their scope does not extend to the operation dimension. The two models concerned are the Service Profit Chain (SPC) (Heskett *et al*., 1994) and Return on Quality (ROQ) (Rust *et al.*, 1995), which have both aimed to clarify the impact of service quality improvement towards various quality dimensions.

The SPC is a conceptually straightforward linear framework, that links service operations, employee assessments and customer assessments to a firm's profitability and growth (Heskett *et al.*, 1994). The underlying concept of the SPC lies in the claims that employee and customer loyalty are key drivers of profitability (Loveman, 1998). The integrative SPC framework assists understanding of how a firm's investment in service quality will be related to customer perceptions and behaviour, and how these then translate into profits (Kamakura *et al.*, 2002). Using the analogy of the 'satisfaction mirror', Heskett *et al.* (1997) illustrate the relationship between employee and customer satisfaction through the notion that business success results from employee satisfaction being reflected in terms of customer satisfaction. There are a number of empirical studies that support a positive impact of employee satisfaction on customer satisfaction (e.g. Schneider and Bowen, 1985; Tornow and Wiley, 1991; Roth and Jackson, 1995). Beginning with the customer, or external side, Loveman (1998) also points out that the SPC provides a good focus on how to define and measure service quality, and then link it to improvements in business performance.

The SPC has been of interest to both practitioners and researchers as a management framework for improving business performance. Its popularity has been supported by practical case studies. The customised SPC approach adopted at Sears, known as the 'employee-customer-profit chain', is a notable application. This SPC approach was used by Sear executives to change the logic and culture of the business. The cause-and-effect business model developed at Sears was used to track success from management behaviour through employee attitudes to customer satisfaction and financial performance (Rucci *et al.*, 1998).

However, Heskett *et al.* (1997) have pointed out that there appears to be less evidence to support some links in the SPC (see Heskett *et al.*, 1997, p. 31). Loveman (1998) also pointed out that the hypothesised model relationships between employee, customer, and financial outcomes had not been rigorously tested using empirical data spanning all components of the model. Loveman (1998), therefore, investigated key relationships of the model, using panel data from the retail branches of a large regional bank. The empirical results supported the hypotheses of linkage within the SPC, however, no claims of causality were made in this study. Silvestro and Cross (2000) also examined the linkages in the SPC model, by reviewing company performance and then conducting correlation analysis. Their empirical results indicated correlations between profit, customer loyalty, customer satisfaction, service value, internal service quality, output quality and productivity; however, there was no evidence supporting the claim that these are driven by employee satisfaction and loyalty.

Both the studies of Rucci *et al.* (1998) and Loveman (1998) focussed mainly on the relationships "between employee and customer outcomes", as the key drivers of financial performance proposed in the SPC. At this point, the author would observe that the focus and orientation of the SPC is towards human relations aspects and marketing issues, rather than considering the context of operations and the associated literature. The internal quality constructs in the SPC are primarily concerned with the 'working environment' (considered to be workplace design, employee rewards and recognition), as the driver of employee satisfaction (see Heskett *et al.* 1994, p.168). The internal operations process dimension (e.g. quality management, process improvement) is barely considered in the model, with little attention paid to the significance of efficient operations systems for enhancing performance (Heskett *et al.*, 1997; Krishnan *et al.*, 1999). Study of such operational issues would help to broaden understanding in this regard, and would be complementary to the SPC framework that has been so influential in the marketing literature.

Indeed, there are a number of studies that attempt to add understanding of the operational performance issues into the marketing literature, several of which focus on financial services. Roth and Jackson (1995) identified the determinants of service quality in the banking industry, signifying the effect of operational capabilities on service quality. Athanassopoulos (1998) developed and tested an efficiency

benchmarking framework for linking service quality with profits, using a sample of retail bank branches. Soteriou and Zenious (1999) developed a framework for combining strategic benchmarking with efficiency benchmarking of the service offered at bank branches. Their empirical findings indicated that there were relationships between operational efficiency and profitability, and between operational efficiency and service quality. Frei *et al.* (1999) explored the relationship between a retail bank's branch-based processes and financial performance, presenting an analytical model that illustrates that improvement of process variation can be more important than improvement in aggregate process performance. These studies all reflect the importance of considering the operational performance dimension as an important driver of service quality, customer satisfaction, and profitability; in particular for the financial services sector. The author, however, considered that the importance the specific improvement initiative had not been specifically or adequately addressed in these studies. This leaves an opportunity to extend understanding further in the context of the BPI initiative, considered as the specific agent for improving the operational performance of internal operations process.

In the first decade of the ' service quality revolution', service quality improvement was not explicitly linked to profit implications (Zeithaml, 2000). Rust *et al.* (1995) noted that, "many companies have been disappointed regarding the lack of results from their quality efforts". Traditionally, the benefits of manufacturing quality efforts have been quantified mainly by considering the resulting cost reductions (e.g., Crosby 1979, Deming 1986). Marketing considerations, especially in the service area, would suggest a need to examine the effects of quality improvement on attracting and retaining customers. Hence, the impact of service quality improvements on profit and other financial outcomes became an important concern for service organisations (Zeithaml, 2000; Rust *et al.*, 2002). Quality improvement efforts are held accountable and forced to demonstrate their benefits with respect to the bottom-line (Soteriou and Zenios, 1999). This led to an emphasis on ability to quantify the revenue increases resulting from quality improvement efforts (Kordupleski *et al.*, 1993). Rust *et al.* (1995) thus proposed a framework for evaluating the impact of service quality improvements on profits, known as the Return on Quality (ROQ) framework. This approach was developed under the assumption that quality improvement efforts are investments, and must be financially accountable. The results of their empirical studies support the positive

relationships running from service quality and customer satisfaction, customer loyalty, and profitability (Loveman, 1998). The approach developed indicates important implications for companies in spending on the quality improvement efforts that likely to achieve the optimal expenditure level (Rust *et al.*, 1995). In essence, the ROQ is a conceptual framework that can be used to guide and justify quality efforts, by focusing upon the financial benefits of service quality improvement. The ROQ is an advance on the SPC, in that it considers cost reductions as well as revenues and market share within the model, but this consideration is not at a detailed level, and the model does not aim to assist the manager who wished to introduce a specific BPI initiative.

Both SPC and ROQ models provide a good foundation for understanding the cause-and-effect implications of service quality improvement. They place emphasis on understanding the business effects (i.e. revenue, market share, profitability) of improving customer-perceived quality within a primarily marketing context. However, they place little emphasis on the specific efforts (i.e. BPI initiatives) that will help improve the efficiency of internal operations processes (see Rust *et al.*, 2002, p.8). In essence, both these models focus upon high-level consideration of the business effects of service quality improvement, rather than upon the process of implementation for BPI initiatives and projects. The author considers this a weakness, because in most cases, it is through the adoption of specific initiatives and projects that service quality improvement actually takes place. Hence, if there are issues of interest connected with the introduction of BPI initiatives to an organisation, these existing models may not accommodate them.

The author, therefore, considered that this area could benefit from further research, considering particularly the important aspects of interpreting such high-level generic service quality models in the contexts of BPI adoption at the operational level (i.e. BPI project). There appeared to be a need for further exploratory study of these contexts, to develop a theory model which can also provide the basis for a practical approach to assessing the outcomes of BPI initiatives towards customer satisfaction. The key gaps and potential areas of interest as identified above are illustrated in Figure 2.2 using the structure of the literature review in relation to key gaps and issues identified.

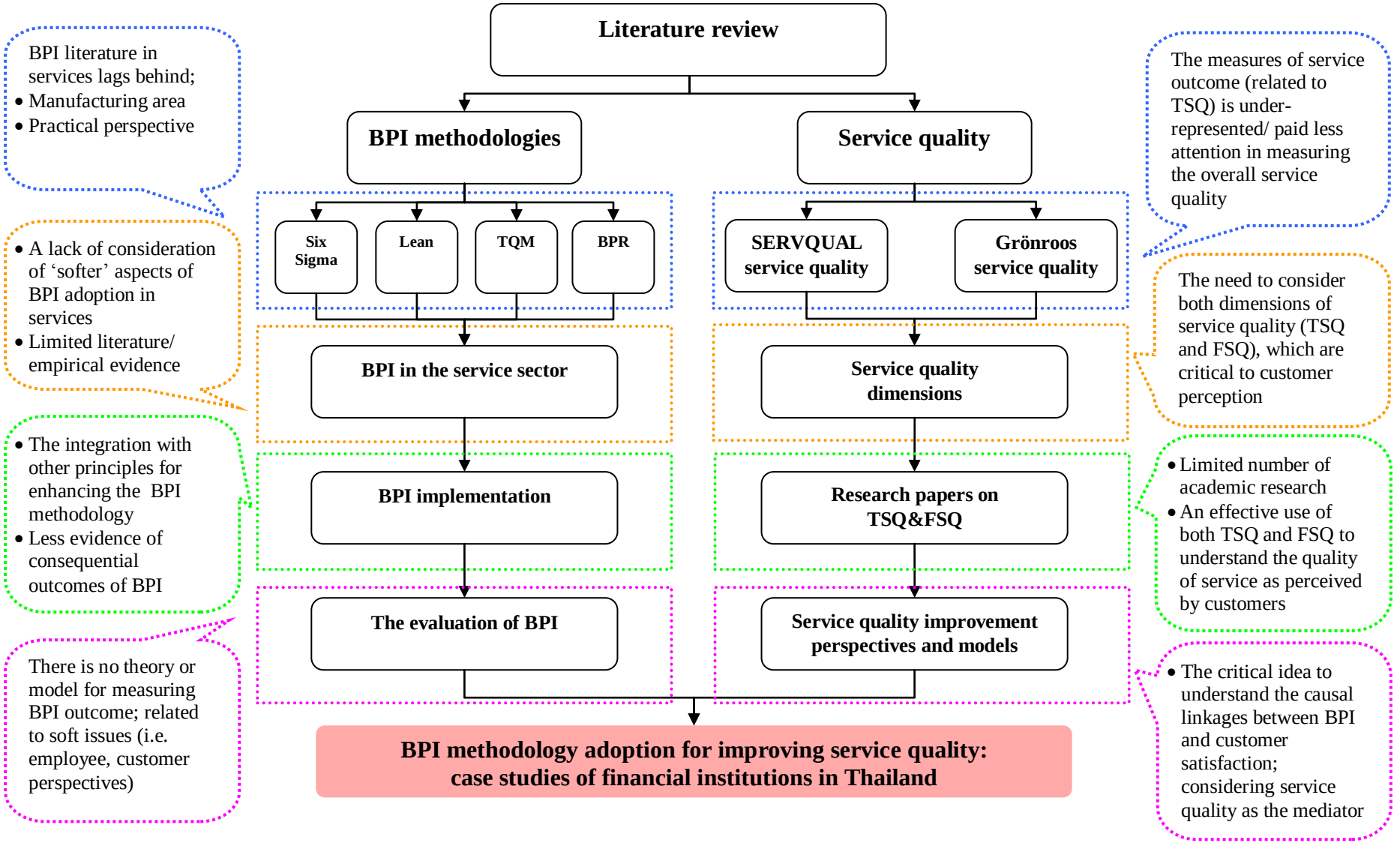

Figure 2.2: The research gaps identified in the literature review (potential areas for further studies)

2.3 RESEARCH GAPS, RESEARCH QUESTION AND THE INITIAL CONCEPTUAL FRAMEWORK

The literature review in Sections 2.1 and 2.2 has clarified the gaps that were identified within and between two existing bodies of literature, related to BPI and service quality. The diagram in Figure 2.2 was also drawn to help in visualizing the gaps identified, and justify the potential areas for research. The author, therefore, summarises five main gaps that were considered critical for this research:

- The review of BPI methodologies in Sections 2.1.1 to 2.1.3 indicated that understanding of BPI adoption in the service sector lags behind the manufacturing area, and practice. Relatively little empirical research is evident in the academic literature, and hence this areas appears to be in an early stage of development. There is a challenge for both researcher and practitioner to further explore the existing phenomenon of BPI methodology, pertinent to applications and approaches adopted in the services sector.
- With this in mind, the author broadened the literature review in Sections 2.1.4 to 2.1.6, considering particularly the important aspects in adopting BPI in the services context. The financial services sector is of interest; however, the literature in this area is still quite limited. There is limited attention paid to the 'soft aspects' (i.e. employee and customer perspectives) of BPI adoption in services. The author considered this an important issue which has not been rationally addressed in the BPI literature, signifying an opportunity to extend an understanding towards service quality principles.
- As also discussed in Section 2.1.6, little empirical evidence is available pertaining to the full range of outcomes of BPI adoption in services. Whilst description of BPI adoption outcomes in manufacturing have typically emphasised cost and operational processes, these may not be so appropriate to services. There appeared to be no comprehensive theory or model in the extant literature, which explains how to measure BPI adoption outcomes from the customer perspective (i.e. perceived service quality, customer satisfaction). The development of a theory model in this area would be useful to both academic and practitioners, to help understand the linkages between BPI adoption (at. operational level) and customer satisfaction.

- The literature review from Sections 2.2.1 to 2.2.4 suggested the importance in integrating both TSQ and FSQ aspects, to capture the overall service quality as perceived by customers. There appears to be some debate related to these two aspects, particularly in the marketing literature (see Section 2.2.2). The author, however, considered that incorporating underlying concepts of both TSQ and FSQ would be more appropriate in understanding the impact of BPI adoption on service quality, considering particularly the financial services area.
- The service quality improvement perspectives were reviewed in Section 2.2.5, while Section 2.2.6 focused on two important service quality improvement models (SPC and ROQ). Both of these models focus upon high-level conceptualizing of the business effects of service quality improvement, rather than upon the implementation specific improvement initiatives. The author considered that the introduction of specific initiatives (i.e. BPI) has not been adequately addressed in this body of literature. Hence, this area could benefit from further exploratory research, considering particularly the important aspect of interpreting such high-level generic service quality models in the contexts of BPI adoption at the operational level (i.e. BPI project).

Considering these related research gaps; this study hence aimed to focus on BPI adoption in financial services at the operational level, and to explore particularly the relationships between BPI initiatives and customer satisfaction. Hence, the main research question is proposed, addressing these research gaps as follow:

> *'How should financial institutions conduct Business Process Improvement (BPI) projects for improving service quality, considering the linkages between internal process improvements and customer satisfaction?'*

In order to reflect the research question, an initial conceptual framework was established to help provide a theoretical background for conducting this research; as suggested by Eisenhardt (1989). The framework was developed concerning three underlying concepts: BPI methodologies, service quality and customer satisfaction. The intention was to establish a preliminary concept of the linkages between BPI and customer satisfaction from the adoption and implementation perspectives, considering both TSQ and FSQ aspects of service quality. A financial dimension was not

incorporated into this framework, because of known data restrictions issues related to the confidentiality of collaborating case companies. Hence, this research was based primarily on the assumption that higher customer satisfaction leads to sustainable revenue growth and profitability; which is in agreement with the key scholarly literature (e.g. Fornell, 1992; Anderson, Fornell, and Lehmann, 1994; Heskett *et al.*,1997).

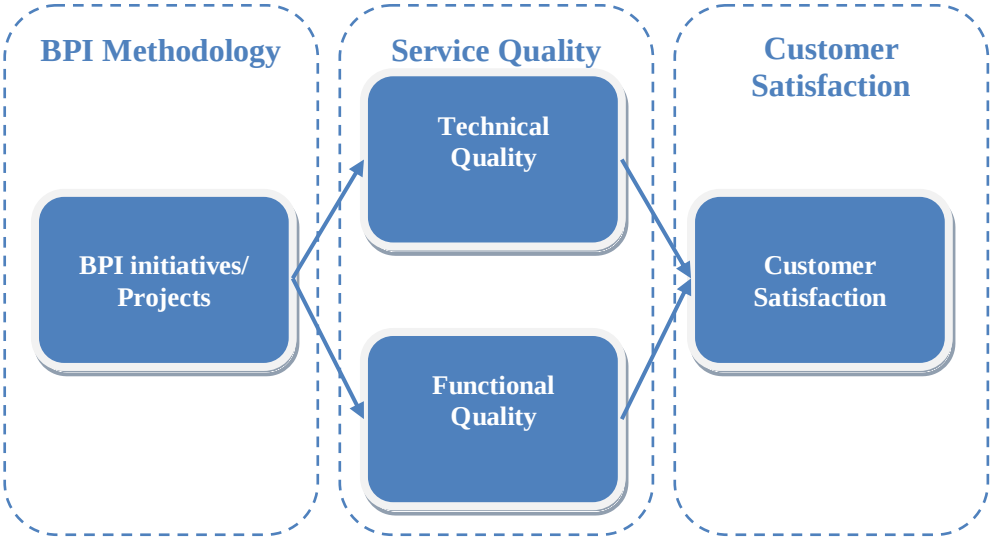

Figure 2.3: The initial conceptual framework

This preliminary conceptual framework served as a basis for developing the final theory model; incorporating BPI methodologies, service quality, and customer satisfaction. This framework will be gradually developed in the next chapters to provide a better understanding of relationships between BPI and customer satisfaction, employing empirical evidence and expert opinion from this study. By considering the research question and the theory building purpose, 'case study research' will be used as the main research strategy. The research design is further described in Chapter 3. Before on moving to consider methodology, however, it is first necessary to review some key literature in the area of performance measurement, as this forms the background to the practical contribution – the BPI evaluation framework – of this thesis.

2.4 PERFORMANCE MEASUREMENT SYSTEM

There is no specific approach currently evident, for evaluating the outcomes of BPI methodology adoption, particularly in the service sector. Little empirical research has been found related to the evaluation of BPI initiatives in this context. However there is a

considerable general literature in performance measurement which was examined, aiming to identify the important criteria required for developing the BPI evaluation framework. The literature in this section will be mainly employed in Chapter 6.

2.4.1 Performance measurement

> *'Effectiveness refers to the extent to which customer requirements are met, while efficiency is a measure of economically the firm's resources are utilised when providing a given level of customer satisfaction. This is an important point because it not only identifies two fundamental dimensions of performance, but also highlights the fact that there can be internal as well as external reasons for pursuing specific course of action.' (Andy Neely et al., 1995, p.80)*

Based on the above quote, performance measurement has been defined as the process for quantifying the 'efficiency' and 'effectiveness' of actions (Neely *et al.*, 1995). It is important that an effective performance measurement system should provide timely, accurate feedback on both efficiency and effectiveness of operations (Kaplan and Norton, 1993). Generally speaking, the underlying objective of a performance measurement system lies in the identification of the measures which are related to 'what' strategic initiative the organisation is trying to achieve (Neely, 2002). Therefore, performance measurement is considered as an important mechanism for an organisation to systematically evaluate the outcome of any initiatives against predefined goals and objectives. It is nowadays a truism among managers, the 'what gets measured gets done'.

Traditionally, financial measures have been used to evaluate the organisational performance. In the early 1980s, the increasing complexity of organisations and highly competitive global markets resulted in the growing realisation that it was inappropriate to focus specifically on the financial measure as the sole criterion for assessing the performance of the organisation (Kennerley and Neely, 2002). In relation to this concern, Kaplan and Norton (1992) argued that organisations had placed excessive emphasis on managing by financial numbers. Fitzgerald *et al.* (1991) suggest that an organisation should consider other performance criteria such as competitive performance and quality, rather than measuring performance based solely on financial measures.

Subsequently, the shortcomings of financial measures have driven organisations to adopt a balanced approach for measuring their performance, including both financial and non-financial measures (Kennerley and Neely, 2002). In response to this shortcoming, performance measurement frameworks were proposed by many scholars, such as the balanced scorecard (Kaplan and Norton, 1992), the performance measurement matrix (Keegan *et al.*, 1989), the results and determinants framework (Fitzgerald *et al.*, 1991), and the performance prism (Neely *et al.*, 2002) etc. The objective of all these frameworks is to help an organisation in defining a multi-dimensional set of measures that reflects their objectives and assesses their performance appropriately (Neely, 2002).

Resulting from the proliferation of performance measurement systems adopted within the organisation, two main shortcomings were identified by researchers and practitioners. Firstly, organisations may face a problem of excessive performance measures whilst lacking understanding of how to interpret and analyse the performance data (Neely, 2002). Additionally, measures are obsolete if not consistent with organisational strategy (Keegan *et al.*, 1989). These problems can cause negative impact in terms of investment cost, time taken, as well as confusion and complexity (Neely, 2002; Kulatunga *et al.*, 2006). The survey results of Neely *et al.* (1995) indicate that the main problem of a measurement system has been shifted from identifying what organisation should measure, to how an organisation could clarify a manageable set of measures. This leaves a question regarding how to identify the appropriate set of measures that helps attain the key strategic objective of the organisation.

The second weakness is a narrow, or uni-dimensional, focus (Neely *et al.*, 2000). Performance measurement often focuses on the objective and quantifiable aspects of cost and productivity, whilst lacking a consideration of other criteria vital to competitive success (Fitzgerald *et al.*, 1991). Similarly, many improvement initiatives have been criticised, concerning excessive emphasis on process-orientation metrics, e.g. time, quality, and cost, rather than assessing the output of the initiative itself (Kaplan and Norton, 1993). Indeed, Neely *et al.* (1995) argue that the Six Sigma mainly focuses on the measurement of the process rather than the output. This narrow focus can be misleading for an organisation in sustaining continuous improvement (Kaplan and Norton, 1992).

Besides these shortcomings, Fitzgerald *et al.* (1991) highlighted drawbacks in transferring the measurement frameworks; that are widely used in manufacturing, to the service sector. These difficulties were raised concerning the specific characteristics of services that differ from production goods, known as the 'IHIP' characteristics. More recently these characteristics have been critiqued, particularly regarding their applicability to all types of services, by key scholars in services marketing (i.e. Lovelock and Gummerson, 2004; Vargo and Lusch, 2004b). Below, some difficulties and directions in developing a services measurement framework in the financial services context are considered, based on the IHIP characteristics:

1) *Intangibility*. Like most other services, financial services have both intangible and tangible aspects, but it can be argued that they are more potentially intangible in some aspects than in services where a substantial tangible element is involved (e.g. a restaurant). Typically, financial transaction nowadays involve the processing of information, resulting in these intangible characteristics of services (Lovelock and Gummesson, 2004). This can cause difficulties in objectively measuring the customer-perceived services outcomes (Parasuraman *et al.*, 1985). Incorporating service quality dimensions might, therefore, assist in capturing the performance of financial services, particularly in the service delivery process.
2) *Heterogeneity*. Complexity of measurement system has been claimed to result from this characteristic of services (Fitzgerald *et al.*, 1991). Lovelock and Gummesson (2004), however, argue that this may not necessary exist in all services types, as the trend towards automation and rigorous application of quality improvement approaches have substantially reduced variability (*heterogeneity*) of output in services, in particular regarding technical quality. This is certainly the case for the modern, relatively homogeneous financial services, while the sector has also been adopting practices from manufacturing (e.g. quality control procedures, standardization, IT development, etc.). In this way, including measures of technical quality would provide an important means of service performance, as perceived by customers.
3) *Inseparability*. In case of financial services, the author also agreed with Lovelock and Gummerson (2004), who argued that the *inseparability* of production and consumption is linked only to the service encounter itself. However, the production of financial service may not necessarily all be

inseparable, considering, for example, the back operations processes. Sampson and Froehle (2006) concur that the idea underlying this front-back office strategy is to decouple processes that depend directly on customer inputs from processes that can be done independently from customer inputs, substantiating their Unified Service Theory. Hence, in understanding this difference, we must consider the separation between back and front operations measures of performance. There has been a recent trend for banks to replace front office customer-facing staff with computer terminals. However, Vargo and Lusch (2004b) considered that separable service offerings produced without "relative involvement of the consumer" (i.e. with staff) are at a disadvantage. This suggests an important issue in understanding the linkage between external (i.e. customer perceived quality) and internal (i.e. operations) measures, for developing an appropriate performance measurement framework in financial services.

4) *Perishability*. Lovelock and Gammesson (2004) argue that the *perishability* characteristic of service may not necessarily be applicable to all types of services. Financial services do indeed have a limited degree of perishability (e.g. marketing-related churn and alteration of interest rates, etc.), but in general they are capable of being inventoried. Vargo and Lusch (2004b) contend that the issue of perishability should be referenced to the value of services, rather than output. Value is co-produced with the customer; the financial services institution can only provide a value proposition (Vargo and Lusch, 2004a). Such conceptions of value should also be taken into account when attempting to measure the performance of services from the customer's perspective.

To summarise then, financial services, while still retaining a high degree of intangibility, are nowadays considered less heterogeneous, imperishable, or inseparable than they were previously considered to be. These considerations help to identify the issues of concern for developing an effective evaluation framework. Relationships between the two disciplines of BPI methodology and performance measurement have been revealed through the literature. Kennerley and Neely (2002) suggested that performance measures need to be consistent with management and improvement initiatives that exist within the organisation, such as benchmarking, TQM, BPR, etc. The survey results of Kumar *et al.* (2008a) indicate the important role of performance

measurement in TQM implementation. Robson (2004) indicates that the main objective of performance measurement is to identify and provide opportunities for process improvement. This type of paper broadens the comprehension of multi-dimensional measures for BPI initiatives. It is particularly important in the service sector to develop sets of metrics that reflect the crucial matters in the operations, by aligning the measures of business process towards the customer interaction (Neely and Austin, 2002). In brief, the development of an effective performance measurement system should help an organisation to: 1) evaluate the BPI initiative performance against the desired goal, 2) provide feedback for internal and external benchmarking, and 3) identify required improvement actions. All these outcomes will help encourage the ongoing improvement efforts, resulting from initial BPI adoption.

2.4.2 Performance measurement frameworks

This section provides a brief review of the balanced scorecard and other existing performance measurement frameworks, which are used as the initial guidelines for developing the BPI evaluation framework in Chapter 6. The emergent theory model, described in Section 6.2, will be reflected on these frameworks, intending to synthesise some critical ideas for assessing the outcomes of the BPI initiative.

2.4.2.1 The balanced scorecard

The balanced scorecard (BSC) of Kaplan and Norton (1992) has been widely adopted and recognised as the most effective performance measurement framework. The BSC was developed to encourage the practitioners to overcome the shortcomings of traditional financial measurement, taking a broader view of performance measures (The centre for business performance, 2009). The BSC has been developed to provide an organisation with a balanced approach to measure their performance both in terms of financial and non-financial perspectives (Neely, 2002). The explicit linkages between four performance perspectives (financial, customer, internal business, and innovation) towards the organisational strategy was considered as the most significant strength of the BSC (Kennerley and Neely, 2002; Kulatunga *et al.*, 2006).

To put the balanced scorecard to work, Kaplan and Norton (1993) suggest that organisation should translate the goals related to time, quality, performance, and service

into operational measures that focus on improvement activities in the operations units. Additionally, internal operations measures should be developed by focusing on the core of business processes that have the highest impact on customer satisfaction (Kaplan and Norton, 1992). This suggests important means for a company to provide the explicit linkage between internal operations, customer and financial measures to understand the bottom-line of the improvement initiatives. In essence, the BSC could be perceived as a management system that helps an organisation to indicate and enhance the breakthrough improvements in the areas of product, process, customer, and market development (Kaplan and Norton, 1993).

2.4.2.2 Other performance measurement frameworks

Besides the BSC, several other measurement frameworks are briefly considered, in the context of developing a BPI evaluation framework. The performance prism was developed to reflect the importance in satisfying stakeholder requirements towards the stakeholder-centric view of performance measurement (Neely *et al.*, 2002). In contrast with the BSC, the performance prism broadens the group of stakeholders; considering employees, suppliers and regulators, besides focusing on shareholders and customers (Kulatunga *et al.*, 2006). The objective is to manage the relationships of all stakeholders, while simultaneously aligning and integrating strategies, processes and capabilities to understand how they fit together for delivering real value to all stakeholders (Neely, 2002).

The performance prism can be considered as a way to encourage people in improving the performance against predefined measures, by communicating how measures in different parts of business could be linked towards stakeholder value (Neely, 2002). The notion of performance prism is relevant to the objective of this research, concerning all related stakeholders who interact with the business processes to be measured. This would facilitate a company in benchmarking, as a means for identifying improvement opportunities, and monitoring the performance of competitors (Neely *et al.*, 1995).

To reflect a balanced set of measures, Keegan *et al.* (1989) proposed a performance measurement matrix, by classifying important measures related to: internal, external, cost-based and non-cost based dimensions. They suggested that the focus of

performance measurement should be on the cost drivers, reported in terms that operations managers can easily understand as well as being consistent with organisational strategy. At this point, the consideration of different categories of business performance in a performance matrix helps in broadening the ideas to develop the BPI evaluation framework by considering; internal, external, and cost dimensions.

Aiming to develop a measurement framework particularly for the service sector, Fitzgerald *et al.* (1991) proposed an idea for measuring the performance, where the end result is a function of determinants. This framework was grounded in the input-process-output model, related to the value chain. The framework consists of two basic types of measure: 1) 'results' (competitiveness and financial performance), and 2) 'determinants of results' (quality, flexibility, resource utilisation, and innovation). Neely *et al.* (2000) suggest that results can be considered as lagging indicators, while determinants are leading indicators. The underlying concept reflects causality, by demonstrating the need to identify the key drivers of performance for achieving the desired performance outcomes (Kennerley and Neely, 2002).

Similarly, Brown (1996) developed a measurement framework focusing on the cause and effect relationships between measures. This represented the explicit linkages pertaining to five stages of business process and the measures of their performance (Kennerley and Neely, 2002). The primary concept is that each stage of business process can be considered as the driver of the performance of the next stage, which is relevant to the ideas of leading and lagging performance measures. The strength of this framework is the integration of the hierarchical view of performance measurement with the business process scrutiny, by categorising the difference between input, process, output, outcome and goal measures (Neely *et al.*, 2002). This framework also assists in separating the measures related to within-business focus (e.g. cycle time, waste, productivity), and external customer dimension (e.g. quality, delivery process) (Neely *et al.*, 2000). The ideas of Brown's framework provide a good basis to measure the outcomes of BPI initiative, especially considering the view of the end-to-end business process.

Overall, the performance measurement frameworks reviewed above provided guidelines in developing the BPI evaluation framework. At this point, it is also useful to consider

the key characteristics that help in identifying an appropriate set of performance measures, which are suggested by Kennerley and Neely (2002), as follows:

1. The set of measures should *provide a balanced picture of the business* by considering both financial and non-financial measures, internal and external measures, and efficiency and effectiveness measures; examples are the BSC and Keegan's framework.
2. The framework should incorporate a *multi-dimensional set of measures* to reflect all areas of performance that are important to the success of the organisation.
3. The framework should explain how *results are function of determinants*, as suggested by Fitzgerald *et al.* (1991), and Brown (1996).
4. The performance measures should be *integrated both across the organisation's functions and through its hierarchy* for encouraging the mutual goals and actions as suggested by Keegan *et al.* (1989).
5. The framework has to provide the *comprehensiveness* that helps in classifying all possible measures into one framework and identifying where there is a need for greater focus.
6. The framework should provide *a succinct overview of the organisation's performanc*e. The measurement approach should be simple and easy to understand by users, and applicable to their organisation.

This set of criteria will be used to justify the appropriateness of BPI evaluation framework in Chapter 6, before proposing the guidelines for assessing the outcomes of a BPI initiative as the key practical contribution of this research.

2.5 CONCLUSION

This chapter reviewed the literature related to the research objectives, with an intent to refine and present the research question, and provide an initial conceptual framework for the research. First, in Section 2.1, the author explored the literature of BPI methodologies and service quality principles. The main focus was on Six Sigma and Lean which are increasingly prominent in financial institutions. This review suggested the need for conducting empirical research, particularly in the service sector, which appears under-studied. In particular, the lack of consideration given to the 'soft aspects' of BPI (i.e. employee and customer perspectives); was considered to be significant for

BPI adoption in services, suggesting a need develop an integrating theory concept to help academics and practitioners understand this area.

Service quality literature was also reviewed, in Section 2.2. Service quality principles were considered as a means for understanding the outcomes of a BPI initiative, as perceived by customers. Two influential service quality frameworks were contrasted, from 'PZB' and Grönroos. The latter's concepts of TSQ and FSQ are important to this research, and the literature concerning these was studied further. Various service quality perspectives were also broadened, considering particularly the SPC and ROQ models. The literature review in Sections 2.1 and 2.2 identified clear gaps, which were delineated in Section 2.3. The research question was then proposed to address these gaps. Thus, the initial conceptual framework was established to provide the main focus of this research.

An outline of performance measurement approaches has been included to provide background for the work of developing a BPI evaluation framework, which is described later in Chapter 6. The review of these performance measurement frameworks suggested useful points in developing the framework, concerning particularly: relevant stakeholders, a balanced set of measures, cost implications, and linkages between measures.

CHAPTER 3
RESEARCH METHODOLOGY

This chapter describes the research design and methodology used for achieving the research aims and objectives outline above. In the early stages of designing the research, researchers need to consider three framework elements; the philosophical assumptions, the strategy of research inquiry (research methodology) and the specific detailed procedures or research methods to be used (Creswell (2003). These constituents will be described coherently, to portray the entire research process. This chapter consists of six sections. Section 3.1 discusses the author's philosophical assumption, which subsequently directs an appropriate choice of research design, described in Section 3.2. Section 3.3 explains the case study research strategy detailed as; case study selection, data collection methods, data collection activities, data analysis, and quality of research design. Sections 3.4 and 3.5 provide the general background of Thai financial institutions and case companies, prior to the conclusion in Section 3.6.

3.1 RESEARCH PHILOSOPHY

An understanding of the philosophical issues helps researchers to clarify the research design appropriate to the research objectives (Easterby-Smith *et al.*, 2002; Saunders *et al.*, 2003). It is imperative to start a study with certain philosophical assumptions or paradigms (Creswell, 2003). This section hence begins with describing a broader view of research philosophies, followed by determining the research paradigm appropriate to the research objectives described in Chapter 1. Key philosophical traditions in relevant academic research are positivism (objectivism) and social constructionism (subjectivism). The difference between these two paradigms is based on how researchers view the nature of reality (ontological assumption), and what they perceive to be the best ways of inquiring into the nature of the world (epistemological assumption) (Easterby-Smith *et al.*, 2002; Bryman and Bell, 2007). The key idea of *positivism* is that the world exists externally, and that its properties should be measured through objective methods, rather than being inferred subjectively through sensation, reflection and intuition (Easterby-Smith *et al.*, 2002, p.28). The knowledge that develops through a positivist lens is derived from careful independent observation and

measurement of the objective reality (Creswell, 2003). A quantitative approach is typically associated with positivist research (Collis and Hussey, 2003). In contrast, *social constructionism* is related to phenomenology and focuses on the ways that people make sense of the world especially through sharing their experiences with others via the medium language (Easterby-Smith *et al.*, 2002). Social constructionist researchers believe that reality is not objective and exterior; therefore, they mainly focus on subjective interpretation, rather than objective measurement. Hence, the qualitative approach is preferred in constructionist research, recognising the involvement of researchers with that which is being studied (Easterby-Smith *et al.*, 2002; Collis and Hussey, 2003). Table 3.1 summarises contrasting features of positivism and social constructionism paradigms in detail.

Table 3.1: The comparison of two research paradigms (adapted from Easterby-Smith *et al.*, 2002; Collis and Hussey, 2003; Creswell, 2003; Silverman, 2005)

	Positivism paradigm	Social constructionism paradigm
Assumptions		
Ontological (nature of reality)	The reality is objective and external (apart from the researcher)	The reality is subjective, and being determined by people
Epistemological (How to know it)	Researcher is independent from that being researched	Research interacts with that being researched
Methodological	• Deductive process • Static design – categories isolated before study • Generalisation leading to prediction, explanation, and understanding	• Inductive process • Emerging design –categories identified during research process • Patterns, theories developed for understanding
Implications		
The observer	Must be independent	Is part of what is being observed
Human interests	Should be irrelevant	Are the main drivers of science
Explanations	Must demonstrate causality	Aim to increase general understanding of the situation
Research process through	Hypotheses and deductions	Gathering rich data from which ideas are induced
Concepts	Need to be operationalised so that they can be measured	Should incorporate stakeholder perspectives
Unit of analysis	Should be reduced to simplest terms	May include complexity of 'whole' situations
Sample requires	Large numbers selected randomly	Small numbers of cases chosen for specific reasons
Generalisation through	Statistical probability	Theoretical abstraction
Preferred research methods	Quantitative research methods (e.g. questionnaire, experimental design)	Qualitative research methods (e.g. interview, observation)

Table 3.1(continued): The comparison of two research paradigms (Adapted from Easterby-Smith *et al.*, 2002; Collis and Hussey, 2003; Creswell, 2003; Silverman, 2005)

	Positivism paradigm	Social constructionism paradigm
Elements of Methods		
Aims	Discovery	Invention
Starting points	Hypotheses	Meanings
Techniques	Measurement	Conversation
Analysis	Verification/ falsification	Sense-making
Outcomes	Causality	Understanding
Strengths and weaknesses		
Strengths	• Provide wide coverage of the range of situations • Fast and economical • May be of considerable relevance to policy decisions	• To understand people's meanings • To contribute to the evolution of the new theories • To adjust to new issues and ideas as they emerge • To look at how change processes over time
Weaknesses	• Tend to be inflexible and artificial • Not very effective in understanding processes or the significance that people attach to actions • Not very helpful in generating theories	• Time and resources consuming • Analysis and interpretation are difficult • Difficult to control research process (e.g. progress, endpoints)

According to Easterby-Smith *et al.* (2002), the acceptance of a particular epistemology usually leads the researcher to adopt methods that are characteristic of that position. Hence, the main argument here was on the author's epistemological assumption, with the aim of selecting the research design choices and research methods which are suitable for this study. This research focuses on BPI adoption in the financial services. Objectives were set, to explore existing phenomena for developing an understanding of how financial institutions conduct BPI projects for improving service quality; and to provide management guidelines to help evaluate BPI projects in practical application. It is useful when considering Table 3.1, to reflect on the researcher's circumstances, aiming to obtain data and understand the experiences of people at different organisational levels regarding BPI projects. Indeed, the researcher was to some extent involved, in interpreting with interviewees what was observed, when aiming to obtain rich data from the in-depth case studies. Considering the key features in Table 3.1, then, the 'social constructionism paradigm' was deemed more apposite in explaining the nature of the author's inquiry into the 'real world'. Figure 3.1 below presents a positioning of the author's philosophical assumptions, mapping onto the matrix of research philosophies developed by Easterby-Smith *et al.* (2002).

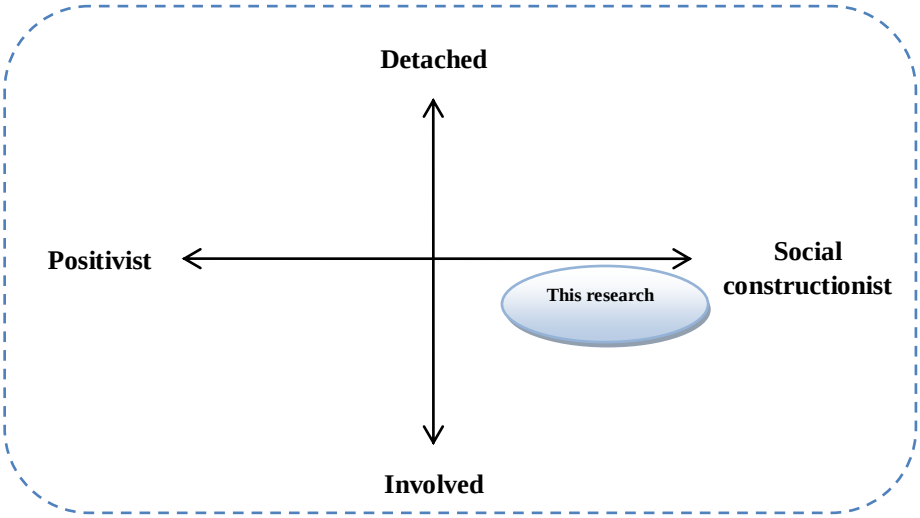

Figure 3.1: The author's philosophical assumption (adapted from Easterby-Smith *et al.*, 2002*)*

The philosophical assumptions underlying the research provided the foundation for the research design, strategy and methods to be used in this study. Primarily because of the need to build theory, case study was chosen as a research strategy, associated with a qualitative approach to research methods. The research strategy will be considered in detail in Section 3.3. First, however, the research design will be described.

3.2 RESEARCH DESIGN

The research design must provide a rigorous research process for achieving the objectives of this study, directly related to the author's philosophical assumption described above. The research design provides a logical consequence that connects the empirical data to initial research questions in pursuit of the ultimate conclusion (Yin, 1994) and suggests a 'roadmap' that clarifies the action plan for attaining the research objectives described in Chapter 1. This research was therefore designed to specifically follow the theory-building process using case studies suggested by Eisenhardt (1989). This consists of four main stages.

Preliminary phase:	Establishing of the conceptual background
Phase I:	Exploratory empirical study
Phase II:	Theory refinement and validation
Phase III:	Development of theory model

In the preliminary phase, two main tasks were accomplished. Firstly, the literature in the areas of BPI methodologies and service quality principle were critically reviewed in

Chapter 2, aiming to underpin the theoretical foundation; which achieved the first objective. The research question was proposed to address key research gaps exposed (Section 2.3). An initial conceptual framework was established to provide a grounding for the theory building process. This provided an *a priori* view of constructs to be studied. Secondly, a preliminary investigation was carried out for selecting appropriate cases. Accordingly, three financial institutions were chosen for theoretical, not statistical, reasons. Overall, this phase provides a well-defined focus for entering into fieldwork, in the next three phases.

In phase 1, three in-depth case studies were conducted to explore and explain the existing phenomenon of BPI adoption, hence addressing the second research objective. The emphasis was on the BPI initiative at operational-level (BPI projects). Hence, three improvement projects were investigated from each case company. Data obtained was analysed through both within-case and cross-case analysis. The critical ideas were also observed illuminating areas for further investigation. Consequently, the first theory model was proposed to focus understanding on the outcomes of BPI initiatives.

The second phase aimed to refine and validate the theory model developed in the previous phase. Expert interviews were carried out to elicit comments and suggestions. Three required actions were then set to be undertaken in this phase (summarised in Table 5.2). In order to attain the third objective, the author analysed data by iterating between theory constructs and empirical evidence considering the relevant literature. The results were used to sharpen the underlying definitions, and to validate the logical consequence of theory constructs. The literature review was further extended to elevate the conceptual level of the findings. Thus, the second theory model was proposed for further verification of the relationships in the next phase.

The aim of the final phase was twofold. Firstly, the author started by revisiting the case companies, to gather more empirical data specifically focusing on examining the relationships of the theory model. Semi-structured interviews were again conducted with employees at different organisational levels in four financial services. This helped to reflect insights to understand ‘how’ and ‘why’ relationships exist. In this phase, questionnaires were also employed, partly to obtain supportive data for drawing a legitimate conclusion. A final theory model was now proposed, attaining the fourth

research objective. Secondly, the theory model was reflected against established performance measurement frameworks to justify criteria to be used, in assessing BPI projects. As a result, a BPI project evaluation framework and step-by-step guidelines were developed to address the final research objective. The structure of research design is summarised in Figure 3.2 below.

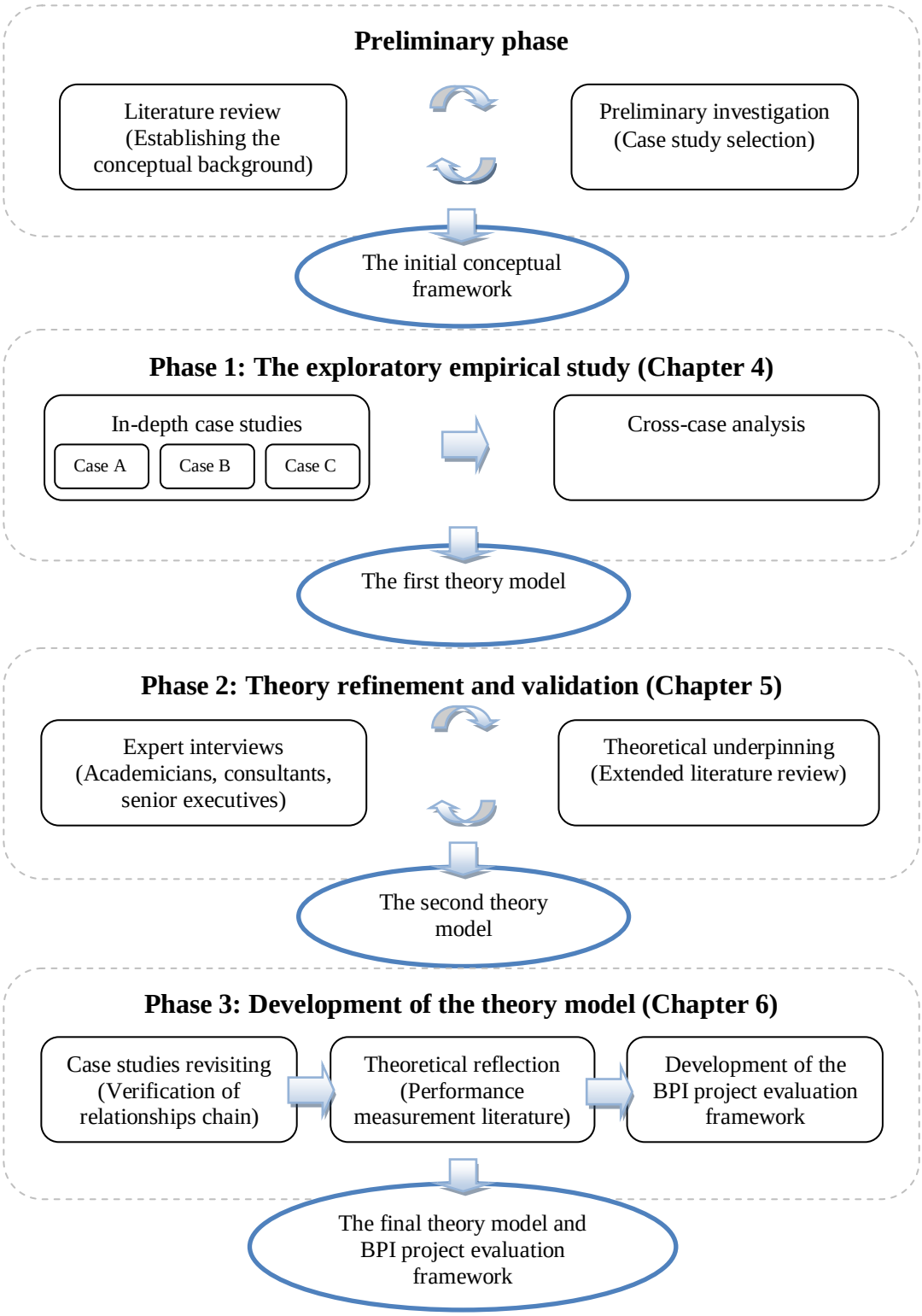

Figure 3.2: Research design structure

3.3 CASE STUDY RESEARCH

Case study is a research strategy which focuses on understanding the dynamics present within single settings (Eisenhardt, 1989). The case study is commonly applied in OM field-based research to describe and develop knowledge based on data from the 'real world' conditions, aiming to bridge the gap between management theory and practice (Flynn *et al.*, 1990; McCutcheon and Meredith, 1993). The essence of case study is to illuminate a decision or set of decisions: why they were taken, how they were implemented, and with what result (Scramm cited in Yin, 1994, p.12). Principally, case studies are particularly useful for clarifying "how" and "why" questions (Yin, 1994). This characteristic of case studies provides an understanding of the meaning within the framework of assumptions, beliefs, and perspectives specified by the researcher (Meredith, 1998).

Case study has become one of the most powerful research strategies in OM, particularly for developing new theory (Flynn *et al.*, 1990; McCutcheon and Meredith, 1993; Voss *et al.*, 2002). The new creative insights and theory, resulting from case study research have high validity with practitioners (Voss *et al.*, 2002). The case study helps researchers to expose the real problems in the phenomenon being studied. As identified in Chapter 2, there is limited amount of empirical research attempting to examine the existing phenomenon of BPI adoption in financial institutions. A lack of plausible existing theory and empirical evidence makes the inductive case study approach an appropriate choice of strategy for developing the theory (Eisenhardt, 1989; Eisenhardt and Graebner, 2007). Aiming to address these gaps and to add fresh perspectives on the scholarly literature, 'building the theory from case studies' was therefore a well-suited strategy to pursue the objectives of this research.

Building theory from case studies is a research strategy that involves using one or more cases to create theoretical constructs, proposition, and/or midrange theory from case based, empirical evidence (Eisenhardt and Graebner, 2007, p.25). Selecting an appropriate choice between single or multiple cases is therefore vital to the subject studied. As Eisenhardt (1989) noted, central to building theory from case studies is replication logic. Characteristically, multiple cases provide a stronger base for theory building (Yin, 1994; Eisenhardt and Graebner, 2007). This approach can also help

researchers to perceive patterns more easily and to eliminate chance associations. (Eisenhardt, 1991). Considering the research objectives, multiple cases would enable the author to search for similarities and differences of the BPI adoption practices in the financial institutions, which are critical to the emerging theory. Overall, multiple cases provide an opportunity to develop a more elaborate and robust theory, whilst also suggesting complementary aspects of a phenomenon (Eisenhardt, 1991). Given the strengths mentioned, multiple cases were deemed appropriate to the aim of theory building in this research. The rationale for selecting cases is discussed in the next section.

3.3.1 Case study selection

The selection of cases is a crucial aspect of building the theory from case studies. Given the aim to explore the existing phenomenon of BPI adoption, theoretical replication was considered pertinent to this objective (Yin, 1994). Hence, cases were chosen for the theoretical reasons, which are particularly suitable for illuminating and extending the emergent theory, as suggested by Eisenhardt (1989). The author aimed to obtain appropriate cases by conducting a preliminary investigation. The focus was primarily on financial institutions that have adopted BPI methodologies as a strategic improvement initiative. The four rational criteria for case selection were: 1) research purposes and questions; 2) experiences in BPI adoption; 3) data availability; and 4) accessibility. As Thailand is a newly industrialised country, the number of plausible cases is limited. Four leading financial institutions were initially selected for preliminary interviews. One was a worldwide financial services company, whilst the other three were Thai commercial banks - the leading financial institutions in Thailand. The key informants at this preliminary stage were all in senior executive management positions, responsible for monitoring and controlling the organisational strategy related to BPI adoption. This process also allowed the researcher to obtain some interviewing experience. Semi-structured interview questions were developed, and then reviewed by one academic and two practitioners (Appendix 1). The questions list was forwarded to interviewees seven days in advance. The interviews lasted around 1-1.5 hours per session. A digital-recorder and field notes were used collaboratively to gather all important information and relevant issues. The preliminary investigation results are tabulated pertaining to the selected case companies in Table 3.2.

Table 3.2: Summary of the preliminary investigation results (case study selection)

Criteria	Company A (SCB)	Company B (GE Money)	Company C (Kbank)
Key objective of BPI adoption	• To focus on building the quality of financial services for customers • The adoption of BPI is part of the change programme in the bank	• To improve the business processes by mainly focusing on customers • Customer-focused approach of BPI adoption	• To improve efficiency, effectiveness and productivity • BPI adoption mainly focuses on improving the operations of each dept.
BPI adoption in the past	• Quality control (management) • Six Sigma (project based)	• Workout • Six Sigma • Lean	• BPR (bank wide) • TQM (individual department)
Existing and future BPI initiative	• Six Sigma (aimed to initiate Six Sigma academy) • Lean	• Six Sigma • Lean	• TQM (trade finance dept) • Lean • Six Sigma (to be adopted as bank-wide in 2010)
Characteristic and structure of BPI team	• BPI team is under the name of "change programme" • Project team members come from different departments (cross-functional team) • Aims to build BPI people to be embedded in each department	• Quality dept. is responsible for facilitating BPI adoption • Facilitate implementation (adopt, implement, deploy and sustain)	• BPI team is part of process development department • Each department tends to have its own BPI team (embedded in the department)
Adoption and implementation issues	• Six Sigma was initiated by CEO under the change programme • Need external consultant in some projects to increase credibility • Adoption is top-down approach (enforce)	• Six Sigma was initiated by CEO • BPI involves with many functions and stakeholders • Organizational culture and change management	• BPR was initiated by CEO • BPR was implemented only at the branch (not end-to-end processes)
Critical success factors	• Leadership and management • Communication and coordination • Knowledge and understanding of BPI methodology • Organisational culture	• Leadership • Communication and involvement • Knowledge and understanding of BPI methodology	• Leadership • Change management • Knowledge and understanding of BPI methodology
Feasibility for conducting as case study	• Six Sigma has been widely adopted in different financial services • There are numbers of successful BPI projects (mainly Six Sigma). The data is available • Able to gain access (CEO approval) • Tends to continuously adopt other BPI methodologies such as Lean etc.	• Six Sigma and Lean are main BPI methodologies • Company has successfully adopted various BPI methodologies. • Worldwide well-known for adopting BPI in the financial services (Six Sigma) • The accessibility is quite difficult • The confidential issue related to data availability	• The first Thai bank to adopt BPI in the financial services (BPR adoption) • Going to adopt Six Sigma in 2010 • Six Sigma and TQM have been adopted in specific department • Able to gain access

It will be noted that only three banks appear in Table 3.2. This is because at the preliminary investigation stage it immediately became clear, that one financial institution was inappropriate, owing to the very limited scope of BPI that was adopted (mainly in the IT department). The author therefore selected three financial institutions, which were considered pertinent to the purpose of this study. Additionally, the data availability and accessibility were determined possible in gaining the rich empirical evidence that is likely to allow the theoretical replication required for building the theory from case studies. The following sections describe the approaches and methods fitted in the empirical case studies.

3.3.2 Data collection methods

Building theory from case studies is deeply embedded in rich empirical evidence (Eisenhardt and Graebner, 2007), which can be qualitative and/or quantitative data (Eisenhardt, 1989). Case studies provide rich empirical descriptions of particular instances of phenomena which are based on a variety of data sources (Yin, 1994). According to the aims of this study, qualitative data collection methods were deemed more appropriate and were the main methods used. The use of qualitative methods enabled the author to gain in-depth understanding and explanations of the phenomenon being studied (Miles and Huberman, 1994; Silverman, 2005). There are various methods used for collecting empirical data for case study such as interviews, archives, questionnaires, and observations (Eisenhardt, 1989; Yin, 1994). For this research, interview was employed as the main data collection method, as it is claimed to be the most effective technique that helps gather valid and relevant data (Easterby-Smith *et al.*, 2002).

According to Voss *et al.* (2002), an underlying principle of data collection in case research is triangulation; meaning the use of different methods to study the same phenomenon. Particularly for building the theory, multiple data collection methods were employed to strengthen grounding of theory by the triangulation of evidence, data-triangulation (Jick, 1979; Eisenhardt, 1989). It was noted that the combination of methods and sources in collecting data can enhance the reliability and validity of evidence (Jick, 1979; Voss *et al.*, 2002). Thus, this section describes various methods and techniques used during the data collection process.

3.3.2.1 Semi-structured interview

Interview was chosen as the primary data collection method, as it is a highly efficient way to gather rich, empirical data, and insights from the interested phenomena being studied (Easterby-Smith *et al.*, 2002; Voss *et al.*, 2002). Since the objective of this research was to understand the existing phenomenon of BPI adoption, interview data was an essential source of information which provides in-depth evidence gathered from key informants. Through the use of semi-structured interview with an open-ended questionnaire format, interviewees can reflect on their experiences and develop opinions freely, pertaining to each question. Furthermore, this approach also assists the researcher to manage the sequence of interview effectively, using the pre-defined list of questions, often referred to as the interview guide (Bryman and Bell, 2007). Given the aim of building the theory, a semi-structured interview allowed the author flexibility to pursue a particular interest and emerging ideas during the interviews, whilst maintaining the focus of this study. Nevertheless, Yin (1994) argued that the interview bias can occur during data collection. In order to mitigate bias, Eisenhardt and Graebner (2007) suggested using numerous and highly knowledgeable informants who view the focal phenomena from diverse perspectives. Accordingly, employees from different organisational levels were selected as the informants, detailed in Section 3.3.3.

3.3.2.2 Documentation/ archives

Documentation and archives were used as secondary data supporting the interview information. Documentations were collected ranging from: project summaries, progress reports, company's annual reports, in-house magazines, communication printings, etc. Archival data was also obtained such as the improvement records of BPI projects, customer satisfaction index, etc. The documentation and archives were employed as supplementary information, and used to confirm and recheck the interview data to increase the reliability of empirical evidence. These types of data are of value for triangulation purposes, as suggested by Easterby-Smith *et al.*, (2002). All secondary data was retained in the case study document-database, and can be presented upon request. The author noted, however, that the confidentiality and anonymity were critical, as the cases were financial institutions.

3.3.2.3 Questionnaires

A structured questionnaire was used to collect supported information, in some cases of restricted access and/or limited number of informants. The questionnaires were developed including both closed and open-ended questions, depending on the group of respondents. The questionnaires were particularly employed in the final phase to verify the relationships of the theory model. These were administered by both survey and on a face-to-face basis. It should be noted that these results were considered supplementary to strengthen the qualitative data, aiming to enhance the reliability and validity of key findings (Jick, 1979).

3.3.2.4 Field notes

One remarkable feature of case study research for building theory is the frequent overlap of data analysis with data collection (Eisenhardt, 1989). To manage this problem, field notes were used throughout the data collection process, and kept recorded in the folders. The author, simply, referred to field notes as a 'research log'- that was used for recording ongoing thoughts and emergent ideas. As Voss *et al.* (2002) recommended, field notes are a running commentary about what is happening in the research, involving both observation and analysis. It was particularly useful for reviewing the developing critical ideas, to help formulate theory. Field notes served as an important means to guide the author's thinking throughout this research.

3.3.2.5 Case study database

A case study database was created as a way to organise and document the data collected from case studies (Yin, 1994). In this research, two types of database were developed, a computer-database and a document-database. The computer-database was developed on an MS Excel spreadsheet. This assisted the author to look into the empirical data in different dimensions, which is essential at the data analysis stage. The case study database served particularly for subsequent cross-case analysis. The example is presented in Appendix 2. Additionally, all case study documents; field notes, archives, transcriptions, were kept in well-organised folders. This made documents readily retrievable for the analysis stage (Yin, 1994).

To summarise, three principles suggested by Yin (1994) were followed in collection of data. Firstly, multiple methods and sources were employed to mitigate the bias and to increase validity of empirical data. Secondly, the case study database was created to enhance the reliability of case studies. Finally, the chain of evidence was maintained throughout this study following the research design process described in Section 3.2.

3.3.3 Data collection

A well-planned data collection is crucial in conducting effective case studies. According to Yin (1994), major tasks in collecting data include: gaining access to key organisations or interviewees, developing the fieldwork procedures, and making a clear schedule of the data collection activities. The first task was explained previously in Section 3.3.1. This section therefore focuses on describing the fieldwork procedures and data collection processes. In order to increase reliability, fieldwork protocols were developed for carrying out three main phases of this research, as suggested by Yin (1994). The protocol consisted of two main sections: fieldwork procedures and semi-structured interview questions. Fieldwork procedures were designed essentially about the data to be collected from the existing people and institutions (Yin, 1994). Additionally, the semi-structured interview questions were developed relevant to the aims and specific inquiry of each phase. The fieldwork protocol served as guidance to conduct the interview, and a checklist to make sure that all topics/ processes have been covered during the fieldwork (Voss *et al.*, 2002). The three sets of protocols are presented in Appendices 3, 4 and 5. The questionnaires were translated into Thai in order to support the interviews. The interview questions were reviewed by, at least, one academic and two practitioners for verifying completeness, content validity and question clarity. These were sent out to interviewees beforehand, aiming to allow them time to reflect on the questions and preparing supporting data or documentation. All interviews were conducted on a face-to-face basis, lasting from one to three hours. A digital recorder and field notes were used jointly to record all data.

Preliminary investigation was conducted at the first stage in order to justify appropriate cases to be studied, as describe in Section 3.3.1. In the main study, fieldwork was carried out in three phases relevant to the research design (see Figure 3.2). The timetable is summarised in Table 3.3.

Table 3.3: Research timetable

Fieldworks	Timetable
Preliminary investigation	Dec 2006 – Jan 2007
Phase 1: Case studies	July 2007 – August 2007
Phase 2: Expert interviews	May 2008 – July 2008
Phase 3: Case studies revisiting	Dec 2008 – Jan 2009

In phase 1, the author conducted in-depth case studies in the three selected financial institutions in Thailand. To gain access, formal letters were sent to the CEO and senior executives to ask for permission. The first meeting with key contact persons at each company was organised to suggest interviewees, and to arrange the interview timetable. The informants were from two hierarchical levels: senior executives and improvement team leaders. Semi-structured interview was used as the primary data collection method. Documents and archives were also gathered for data-triangulation purposes. Interviews were transcribed into Thai, and written up in paragraphs in response to each question. The author noted that the full translation in English was not presented regarding the amount of empirical data. Transcriptions and archives were maintained on the case study database.

In the second phase, discussions were carried out with experts including academics, professional consultants, and practitioners. During this phase, the interview questions were adjusted continually to probe particular themes which emerged. This allows researcher to take advantage of special opportunities which may be present in a given situation (Eisenhardt, 1989, p. 539). Aiming to optimise the limited time, the author revisited case companies A and C to collect further data, whilst unfortunately further access to company B was not permitted. This data obtained was used in the data analysis phase 3. In the final phase, the data collection focused on investigating relationships within the proposed theory model by revisiting case study companies, to examine four important areas of financial services through informants from different organisational levels. Quantitative data was collected by questionnaire survey and a matrix developed (see Appendix 5), to be used as supporting evidence.

Interviews were transcribed as soon as possible, to recall and comprehend all information. The first transcription, in Thai, was consistent with the semi-structured

questions. The focus was on the important themes, rather than writing up a case narrative. The author's interpretations, ideas and insights were also noted in the transcription. Emails were sent out to informants where further clarification was required. The full interviewees list is provided in Appendix 6. The abbreviation codes of each interviewee were used for referencing the information obtained from interviews. Further details of data collection in each phase are described in Sections 4.1, 5.1 and 6.1. The data collection is summarised in terms of; methods used, organisational level, and number of informants in Table 3.4. Once the data was collected, the next process was data analysis.

Table 3.4: Summary of data collection

Phase	Data collection methods	Organisational level	Key informants
Preliminary investigation	Semi-structured Interview	Executive management	4 Executive managers
Phase I :Exploratory empirical study	Case Studies 1)Semi-structured interview 2)Documentation/ archives	1)Executive management	3 Executive managers
		2)Internal consultant/ process Improvement Team Leader	5 Internal consultants/ process team leaders/ 2 Master Black belt
Phase II :Refinement and validation (expert interviews)	Semi-structured Interview	1)Academic	4 Academicians
		2)Consultant/partner	3 Consultants
		3)Executive management	3 Executive managers
Phase III: Theory development (fieldwork 2+3)	Semi-structured interview	1) Executive management	7 Executive managers
	1)Semi-structured interview 2)Questionnaires Survey	2)Operations management	6 Operations managers Interviews 15 Branch manager (via questionnaires)
		3)Operations employees	5 Operations staffs 15 Operations staff (via questionnaires)
	Semi-structured interview	4) Internal consultant/ process improvement team leader	11 Internal consultants
	Questionnaires Survey	5)Customers	63 Returned questionnaires

3.3.4 Data analysis

Qualitative data analysis typically consists of three concurrent activities: data reduction, data display, and conclusion drawing or verification (Miles and Huberman, 1994). All activities were applied throughout the analysis process in order to provide compelling results. As Eisenhardt (1989) has emphasised, data analysis is at the heart of building theory from case studies; however, it is the most difficult and the least codified part of the research. In order to tackle this concern, the author organised the data analysis process used in three phases, as follows.

3.3.4.1 Case study analysis (Phase 1)

In this phase, standard techniques were employed consisting of within-case and cross-case analysis (Eisenhardt, 1989; Miles and Huberman, 1994; Yin, 1994). These are explained as follows;

- Within-case analysis

The aim of within-case analysis was to describe the existing phenomena observed from case companies. The first task was to organise empirical data into an understandable and accessible format. Interview transcriptions were reviewed iteratively to search for particular themes emerging from case studies. Archives were also integrated and triangulated to enhance the reliability of evidence. The unit of analysis at this stage was primarily the BPI project, although in each case company, company-level data was also applicable to the analysis. All projects were analysed following the same structure, looking for any emergent patterns, before attempting to generalise patterns across the cases (Eisenhardt, 1989). Hence, the three BPI projects in each case company were compared and contrasted to identify insights into how each company conducted them. Accordingly, a report was written up to provide the basic description of BPI adoption in each case company. The empirical evidence was kept in a database developed on an MS Excel spreadsheet. Hence, the within-case analysis provided some rich understandings of each case, which was needed for the cross-case analysis.

- Cross-case analysis

The cross-case analysis was carried out to analyse the empirical data through the use of structured and diverse lenses, aiming to search for cross-case patterns (Eisenhardt,

1989). The unit of analysis was now primarily at the case company-level, focusing on common approaches and differences of BPI project adoption and implementation among the institutions. This analysis followed the cross-case comparison process suggested by Eisenhardt (1989) and Mile and Huberman (1989). Various different approaches were applied to look at empirical data. Tables and matrixes were employed throughout the analysis process to cluster and organise data into an accessible format for drawing valid conclusions and emerging theory elements. It was noted that the case study database was helpful in visualising the data from different dimensions. Various versions of analysis were kept recorded in sequential folders for further use. By comparing and contrasting BPI adoption approaches among case companies, a conceptual diagram was drawn to understand how financial institutions conduct a BPI project, as shown in Appendix 7. This assisted in structuring the explanation of case studies. In the role of OM researcher, the author also identified critical ideas which could enhance the effectiveness of BPI adoption in practice, in which the focus was on the measurement of a BPI project.

3.3.4.2 Refinement and validation of theory constructs (Phase 2)

In order to develop a concrete theory model, it is necessary to sharpen theory constructs, looking particularly at underlying definitions (Eisenhardt, 1989). The author chose to achieve this aim by eliciting considered suggestions from experts, in refining and validating constructs. The critical ideas were elicited from expert interviews. The various comments and suggestions were prioritised and clustered using tabulation techniques (Miles and Huberman, 1994). A specific process was adopted to advance the theory model, summarised in Table 5.2. Principally, the author iterated between proposed theory constructs, expert views and empirical data from the case studies, in the context of the literature, to refine and validate the model. At this point, the underlying concept of each construct was again compared with key relevant literature to raise the theoretical level, and sharpen the definitions. The measures of each construct were developed based on cases evidence. As a result, the theory constructs were refined, and a logical consequence was validated; which helped the author to verify the emergent relationships among constructs in the final phase.

3.3.4.3 Verification of relationships chain (Phase 3)

As Eisenhardt (1989) suggested, this phase aimed to verify that emerging relationships between constructs fit with the evidence from case studies. The underlying logic of relationship verification was the search for 'replication' (Eisenhardt, 1989). Four relationships in the theory model were set to be examined. The analysis strategy used in this phase was to look at the evidence from different sources including both qualitative and quantitative data. To verify each relationship, interviews with several informants at different organisational levels were analysed to understand 'why' the relationship exists, which helped to establish the internal validity. This analysis approach was supported by Mile and Huberman (1994) in building a logical chain of evidence. Additionally, the quantitative data, obtained from questionnaires, was analysed by using descriptive statistical analysis. The results were used to supplement the qualitative findings. In essence, the emergent relationships were confirmed by the replication of case studies evidence. The analysis findings were presented, corresponding to each relationship in order to understand 'how' and 'why' linkages between constructs exist. In the final stage, the proposed theory model was again compared with the extant literature to enhance the internal validity, generalisability, and theoretical level (Eisenhardt, 1989).

Overall, then, the analysis process followed the theory building approach suggested by Eisenhardt (1989). The aim was to ensure that the empirical data from the three fieldwork phases were analysed stage-by-stage, in a rigorous manner until reaching the final theory model. During the process, a number of methods were used in order to ensure both reliability and validity of the empirical findings. The next section will discuss the quality of research design employed in this study.

3.3.5 The quality of case study research

This section will briefly review the quality of case study research associated with this study. According to Yin (1994), four tests are commonly used to establish the quality of empirical case study research. In order to assess the quality of this study, methods and techniques employed throughout data collection and data analysis were analysed, compared with the four tests suggested by Yin (1994) and shown in Table 3.5.

Table 3.5: The assessment of case study research quality (adapted from Yin, 1994, p. 33)

Test	Case study tactic	Phase of research in which tactic occurs	Methods/techniques used in this research
Construct validity	Use multiple sources of evidence	Data collection	• The use of interview data, documentation and archives • Quantitative data was collected as supporting evidence
	Establish chain of evidence	• Data collection • Data analysis	• Triangulation of methods was used to investigate each relationship • Different groups of informants were chosen
Internal validity	Do pattern matching or explanation building	• Data analysis	• Development of case study database for identifying the unique pattern through both within and cross case analysis • Relationships were established
External validity	Use replication logic in multiple case study	• Research design • Data analysis	• Three BPI projects were examined in each case • Three cases were analysed using the same structure
Reliability	Use case study protocol	Data collection	• Three protocols were developed as guideline for conducting fieldworks • Semi-structured interview questions were designed for each phase of data collection
	Develop case study database	Data collection	• Gathered data was retained systematically in separate folders • Case study database developed on the MS Excel spreadsheet

It can be seen that each element of validity is supported by several appropriate methods and techniques, used either in the data collection or analysis activities of the various research phases. Hence, the author considers that the proper steps were taken to assure research quality in terms of the case study validity.

3.4 THE FINANCIAL INSTITUTIONS IN THAILAND

The Thai financial services sector consists of several types of financial institutions including; commercial banks (local and foreign), finance companies, credit foncier[1] companies, specialised financial institutions, asset management companies, and non-bank institutions which include credit card, personal loan, etc. Among these constituents, commercial banks are the oldest and largest part of the Thai financial system, accounting for the largest component in terms of total assets, credit extended and savings mobilised (Warr, 1999). Statistical information from the Bank of Thailand indicated that commercial banks account for 60 percent of financial sector assets (Nakornthab, 2007). As of August 2009, there were 37 commercial banks in Thailand, comprising 18 local and 19 foreign commercial banks[2].

When, in July 1997, the Asian Financial Crisis hit Thailand and the region, the Thai commercial banks were centre stage in the difficulties that hit the Thai economy in the following period (Nakornthab, 2007). Resulting from this crisis, most of the financial institutions effectively collapsed, and virtually all of them had to be recapitalised, influencing the shrinkage of the Thai economy by almost 10% in 1998 (Menkhoff and Suwanaporn, 2007). The level of non-performing loans (NPL) increased drastically. At that time, the government explicitly encouraged foreign banks to participate more actively in the Thai financial services sector. Consequently foreign banks have gained a higher market share, of more than 15% of the Thai financial market (Menkhoff and Suwanaporn, 2007). The increased number of foreign banks led to higher overhead costs, in turn causing a decline in the profits of the Thai financial institutions (Kubo, 2006). The overall result was a much more competitive market in the Thai financial services sector. This was a difficult period for Thai financial institutions; accordingly, they attempted to implement several improvement initiatives to deal with their most pressing problems. Financial institutions were repositioning their financial services, previously focusing on giving customers financial products, to deliver 'total financial services packages' for enhancing customer value. After the 1997 crisis, BPI methodologies became increasingly prominent considering a customer-focused approach.

[1] Credit Foncier is a financial institution providing mortgage loans.
[2] Bank of Thailand, www.bot.or.th/English/FinancialInstitutions/WebsiteFI/Pages/instList.aspx, accessed date: 26th September 2009.

In fact, though it was accelerated by the financial crisis of the late 1990s, the evolution of BPI adoption in Thai financial institutions began earlier, at the start of that decade. Widely known as the most innovative bank, Kasikorn Bank initially adopted Business Process Reengineering (BPR) for improving business processes, incorporating new IT system implementations to support radical changes of operations processes through all branch channels. Furthermore, TQM was adopted for managing the operations process, but was not reported as a bank-wide implementation at Kasikorn bank. After the 1997 crisis, the entry of foreign banks was an imperative factor that stimulated the local banks in adopting BPI initiatives to stay competitive in the financial market. Outstandingly, GE Money, Thailand, was a very competitive financial institution that adopted Six Sigma and Lean as its strategic improvement initiative throughout all business functions, which became part of its organisational culture. In 2002, the Siam Commercial Bank, which was the first Thai commercial bank, announced that the Six Sigma methodology had been institutionalised as its strategic approach for ensuring both operations process efficiency and high service quality, as part of a fundamental change programme and restructuring of the organisation.

Recently, the global economy recession starting in 2008 has again significantly affected the Thai financial services sector, regarding the sub-prime problem in the United States, which eventually precipitated the global financial crisis and credit crunch, and the collapse or rescue of large financial institutions around the world. This crisis has clearly impacted the real economy producing recession in many developing countries, including Thailand. The overall Thai economy in 2008 grew by 2.6%, a substantial slowdown from 4.9% growth in 2007. In the first quarter of 2009, the GDP of the financial services sector increased by 4.2% slowing down from 10.2% in the same period of 2008, in accordance with the deceleration reflecting the global financial crisis and economic downturn[3]. According to senior sources, it is important that Thai financial institutions become more cautious in managing their business operations, particularly improving both financial products and services to stay competitive in the world's turbulent economic conditions.

[3] Gross Domestic Product: Q1/2009, Office of the National Economic and Social Development Board of Thailand.

A decade after Thailand's worst economic calamity, financial institutions have continued improving the business processes, aiming to sustain the stability and profitability in the rapidly change situation. BPI methodologies are, nowadays, recognised as an imperative strategy for improving the efficiency of processes, together with quality of service in Thai financial institutions.

3.5 CASE COMPANIES BACKGROUND

This section provides the general background of case companies studied in the first phase. According to the case study selection in Section 3.3.1, three financial institutions will be detailed, as follows. Many of the evidence sources used in this section are websites and annual reports, which will be provided as footnotes rather than placing them in the academic references section of the thesis.

3.5.1 Company A

Company A was established as the first Thai commercial bank in 1906[4], by the visionary Prince Mahisara Rajaharudaya (H.R.H. Prince Mahisorn), a brother of King Chulalongkorn Rama V of Thailand[5]. Having a unique heritage and long history of providing exemplary service to customers, company A has long been recognised as the largest Thai Financial Institution with the highest price-to-earnings ratio. The Bank's operational effectiveness was earlier recognized by Money & Banking Magazine, which named it as "Bank of the Year" for four consecutive years (1989 to 1992) for the best all-around performance, notably its market share, net profit per share, social welfare activities, and organisational development.

As of December 31, 2008, there were 949 branches, 6,030 ATMs, and 137 foreign exchange kiosks countrywide[6]. The number of employees was 17,959. Even in the increasingly recession-hit economy, company A registered a return on equity (ROE) of 18% with a net profit of Baht 21,414 million (23.4% increase from 2007), which was the highest level among financial institutions in Thailand at the end of 2008[3]. The total market capitalization as of March 31, 2009 was Baht 183,887 million.

[4] Siam Commercial Bank profile 2009, www.scb.co.th, accessed date: 15th August 2009.
[5] Our history, http://www.scb.co.th/en/abt/abt_lgd_rbb.shtml, accessed date: 17th August 2009.
[6] Annual Report 2008, Siam Commercial Bank PCL.

Nowadays, company A Bank remains a strong institution, prepared to grow stably in a changing world[7]. It provides a wide range of financial services, including corporate and personal lending, retail and wholesale banking, foreign currency operations, international trade financing, cash management, custodial services, credit and charge card services and investment banking services, through its head office and its extensive branch network. In 2009, company A was named as the best bank in Thailand through various associations and magazines such as Euromoney, Financial Asia, Global Finance, and Asiamoney [8] etc. Besides being the bank of good choice for customers, the company was also acknowledged as a superior workplace for employees by the Gallup organisation[9].

3.5.2 Company B

Company B is recognised as a leading provider of retail banking and financial services to consumers, retailers and auto dealers over 55 countries worldwide. It was claimed as the world's largest retailer finance programme provider with more than 260,000 locations[10]. In December 2008, the fact sheet highlighted that the total revenue was 25 billion US dollars with total assets value of 183 billion US dollars[11]. There are now approximately 130 million customers and 60,000 employees across the world. Company B entered the Thai market after the Asian Financial Crisis which started in 1997. Having now had experience in the Thai financial sector for more than 10 years, company B is recognised as the leading consumer financial services provider. Currently, company B offers a wide range of consumer finance products and services to over 3 million Thai customers including auto finance, credit cards, private label cards, instalment finance, and personal loans[12]. The statistical information from BOT indicated that company B is the largest credit card issuer in Thailand with over 1.75 million cards in circulation.

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[7] Quality and Integrity Pave the way to the Future, http://www.scb.co.th/en/abt/abt_lgd_qbf.shtml, accessed date: 17th August 2009.
[8] Award and Ranking, http://www.scb.co.th/en/abt/abt_awb.shtml, accessed date: 17th August 2009.
[9] Gallup Great Workplace Award, http://www.gallup.com/consulting/25312/Gallup-Great-Workplace-Award.aspx, accessed date: 17 August 2009.
[10] GE Money Website, http://global.gemoney.com/en/whereweoperate/asiapacific/thailand.html, accessed date: 12th August 2009.
[11] Annual Report 2008, GE Money.
[12] GE Money, Thailand Website, http://www.gemoneybank.co.th/tha/home.html, accessed date: 12th August 2009.

3.5.3 Company C

Company C was established in 1945. As of June 30, 2009, company C was recognised as the fourth largest commercial bank in Thailand, with registered capital of Baht 30,486 million, had total assets of Baht 881,648 million, total deposits of Baht 909,025 million, and total loans of Baht 877,141 million[13]. The Bank operates 721 branches across the country, comprising 245 Bangkok Metropolitan branches and 476 upcountry branches with 5,102 ATMs[14]. The total number of employees is 13, 560. According to the operating performance in 2008, company C registered a return on average equity (ROE) of 14.35%, with a consolidated net income of Baht 15,333 million, increasing by 2.19 percent over 2007.

In 2005, company C was the first Thai commercial bank which offered businesses a 'complete financial solution'. Resolutely intent on continuously improving the business operations, company C has been awarded with many marks of recognition including: "Best Trade Finance Bank and Provider 2008" from the Global Finance magazine, "Bank of the Year 2008" Award from Interest magazine, and "The Asian Banker Excellence in Retail Financial Services Awards" organised by The Asian Banker Journal etc. To stay competitive among the Thai financial institutions, company C has continuously pursued the direction in enhancing competitiveness and the ability to maintain sustainable profitability for all stakeholders.

3.6 CONCLUSION

The author's philosophical assumption of this research has been firmly positioned in the social constructionism paradigm, which directed and shaped the research design and research process employed in this study. Four main stages were planned, including: establishing the conceptual background, an exploratory empirical study, theory refinement and validation, and development of a theory model. Case study was chosen as a main research strategy with the aim of building new theory. Data collection and data analysis processes were delineated relevant to the three main fieldwork phases, as summarised in Table 3.6. The background of Thai financial institutions was also presented prior to a general introduction to the three case companies.

[13] Company Background, www.kasikornbank.com, accessed date: 14th August 2009.
[14] Annual Report 2008, Kasikornbank PCL.

Table 3.6: Summary of research methodology chapter

Phase	Research design	Data collection	Data analysis process	Deliverables/ Outcomes
Preliminary phase	Literature review (Chapter 2) Preliminary investigation (Chapter 3)	Relevant literature Interviews with four financial institutions in Thailand	Literature study Interview transcription (justify appropriate cases)	• Key research gaps • The research question • Selected cases to be studied
Phase 1	Exploratory empirical study (Chapter 4)	Three in-depth case studies (financial institutions)	Within-case analysis Cross-case analysis	• Case company description • Cross – case explanation • The first theory model
Phase 2	Theory refinement and validation (Chapter 5)	Ten expert interviews (academicians, consultants, practitioners)	Expert interview analysis (identify critical ideas) Extended literature review	• Required actions for theory refinement and validation • Sharpened theory-constructs • The second theory model
Phase 3	Development of theory model (Chapter 6)	Case study revisiting (four financial services at case companies A and C)	The relationships verification Compared the theory model with extant literature (enfolding literature)	• Confirmed relationships • The final theory model • The BPI project evaluation framework

CHAPTER 4
THE EXPLORATORY EMPIRICAL STUDY

This chapter presents the exploratory empirical evidence from three in-depth case studies. This aims to understand the existing phenomenon of BPI adoption in Thai financial institutions, and identify critical ideas observed for further investigation in the second phase of this research study. In this chapter, all case study companies are analysed comprehensively to understand how they conduct BPI projects for improving service quality: it then proceeds to the cross-case analysis that intends to address the second research objective. Both within-case and cross-case analysis are explained explicitly to reflect the empirical insights and theoretical elements (Eisenhardt, 1989; Miles and Huberman, 1994; Yin, 1994). The first theory model is proposed, grounded in the empirical findings, as the final outcome of this chapter.

After the review of the key literature in Chapter 2, an initial conceptual framework (Figure 2.3) was provisionally developed to provide the theoretical view for conducting this research (Eisenhardt, 1989; Yin, 1994). The proposition was to understand how BPI methodology adoption could improve the overall service quality for enhancing customer satisfaction, by incorporating the BPI methodology and service quality principles. As previously mentioned, little empirical research has been found relating to the adoption of BPI, particularly in the financial services sector. The author therefore considered it important to conduct the exploratory empirical study as the first phase of this research.

This chapter is organised in six main sections. Section 4.1 introduces the background to the case studies pertaining to the analysis structure and documentation. From Sections 4.2 to 4.4, all case studies are analysed to describe how they conducted BPI projects, focusing on three projects in each case company. Section 4.5 presents the key empirical findings from the cross-case analysis to portray the entire picture of BPI adoption in the financial institutions. The second research objective will then be addressed, followed by a summary of critical areas for further investigation. Finally, the first theory model will be proposed as the conclusion, in Section 4.6.

4.1 INTRODUCTION TO THE CASE STUDIES

The objective of case studies was to explore how financial institutions conducted BPI projects for improving service quality to enhance customer satisfaction. The case studies were undertaken in three leading financial institutions in Thailand, to be indicated by codes A, B, and C. At the case companies, semi-structured interviews were conducted on two organisational levels: senior executive management and improvement team leader/ internal consultant, to gain a comprehensive picture from different perspectives and assist within-case triangulation. The senior executive interviews were meant to provide the strategic view of BPI adoption, whilst the improvement process team leaders were asked to clarify the implementation of BPI projects.

The interview questions were developed based on the initial conceptual framework (see Appendix 3). These were sent out at least seven days prior to the interview, intending to provide interviewees time to reflect on the questions. The interviews were carried out on a face-to-face basis, lasting around 1-2.5 hours. A digital recorder and field notes were used to collect all information. Company documentation and archival data were requested for triangulation purposes (Jick, 1979; Yin, 1994). In total, thirteen interviews were conducted with nine interviewees. The interview details were summarised and provided in Appendix 6.

At this stage, the unit of analysis focused mainly on the operational level of BPI initiative. Three projects were therefore investigated, to understand the BPI adoption approach employed in each case company. All improvement projects were coded for referencing in the analysis stage in Table 4.1. To be retained as case studies evidence, interview data was transcribed and recorded in a case study database. This would help in retrieving and analysing the empirical data in both within-case and cross-case analysis.

Table 4.1: BPI projects code

No.	Case study company	Business/ quality improvement project	Project code
1	Company A	Saving account opening cycle time improvement	PA1
2	Company A	Credit card renewal process improvement	PA2
3	Company A	Housing loan origination process optimisation	PA3
4	Company B	Car leasing process improvement	PB1
5	Company B	Auto loan (used car) process improvement	PB2
6	Company B	Auto loan (time to cash) process improvement	PB3
7	Company B	Sales and service quality improvement	PC1
8	Company C	Customer service quality improvement: Loan notification process	PC2
9	Company C	Loan approval process improvement	PC3

Before the presentation of the case studies, the exploratory empirical study structure is provided to assist understanding of the analysis approach in Figure 4.1. Each case is organised in four sections including; adoption background, initiation, implementation, and measurement of the BPI initiative. The within-case analysis will be described in Section 4.2 to 4.4 as follows.

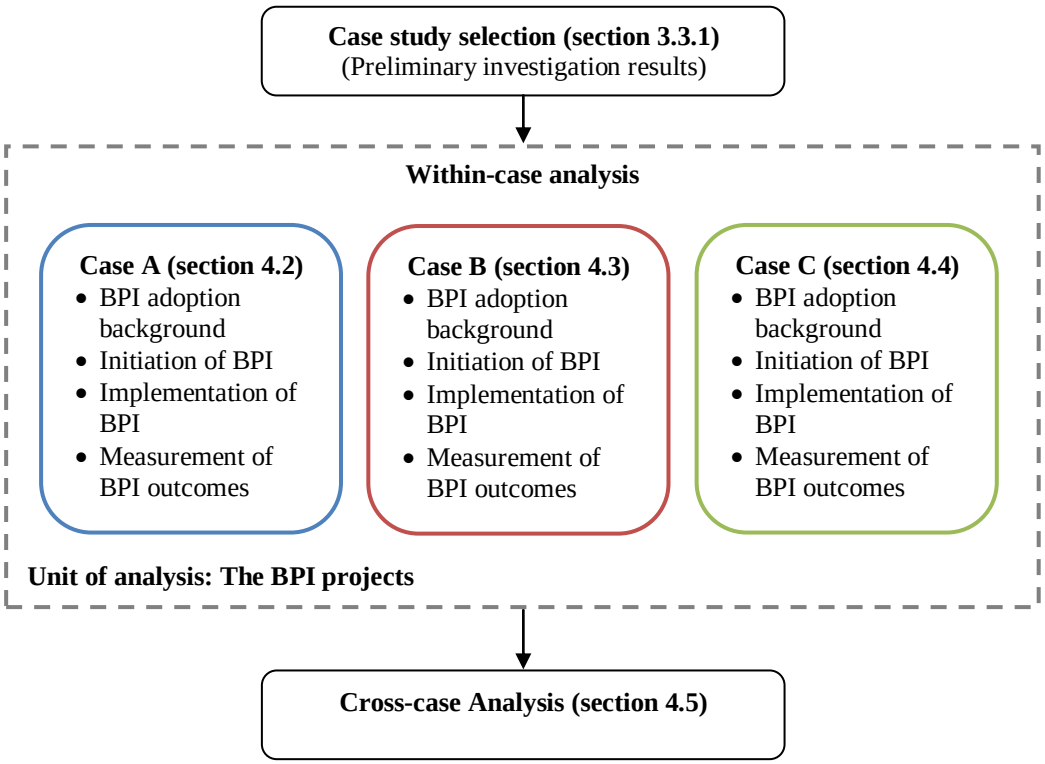


Figure 4.1: The exploratory empirical study structure

4.2 CASE STUDY A

On the 100th anniversary in 2007, the Board of Directors approved the vision of "To be the Bank of Choice for Our Customers, Shareholders, Employees and Community". The vision reflects a change in direction of Company A direction to engage with customers, employees, and shareholders, aiming to achieve the sustainable competitive edge which in turn gains long-term profitability[1].

4.2.1 BPI adoption background

The Asian financial crisis in 1997 made it imperative for company A to adopt several approaches and techniques for improving both financial and operating performances. In 2001, the company's transformation agenda was initiated resulting in changing the business model, organisational structure, operations process, system, and culture; a so-called 'Change Programme'. This aimed to reposition the company to excel in each market it competes for, enhancing the strength and stability in the Thai economic landscape[2]. The first phase of the Change Programme focused on rebuilding the bank's foundation to strengthen its underlying businesses and operating model. Since 2003, a Six Sigma methodology has been adopted as a strategic approach to ensure both process efficiency and high service quality. To institutionalise the Six Sigma, currently, there are more than 130 operations managers who are certified as Yellow belt. After the success of the Six Sigma initiation, the focus was shifted to the implementation of improvement projects supporting the growth of the core business in the second phase. In the third phase, the change programme emphasised on building capabilities to differentiate the company's products and services. Currently, the programme aims to leverage from synergies across the Bank to enhance the value to all customer segments.

Figure 4.2: The revolution of Change Programme at company A[3]

[1] Performance and Plan 2007, Quarterly Magazine, company A.
[2] Annual report 2008, company A.
[3] The revolution of Change Programme, http://www.scb.co.th, accessed date: 17th August 2009.

The Senior Vice President of Change Programme Management Officer (EA1) explained that this programme is supervised by the 'Change Programme Steering Committee (CPCS)', chaired by the Chairman of Executive Committee, together with the President and other senior executives as committee members. The CPCS committee was formed to determine the overall direction of a strategic programme, endorse the project charter, resolve the resource contentions, monitor the progress against the plan, and review the expected outcome and benefit after completing the project. Furthermore, the role 'Change Programme Management Officer (CPMO)' is to support, monitor and disseminate the progress of improvement projects initiating by CPCS to all relevant stakeholders. CPMO is selected from various departments to form the cross-functional improvement team.

To date, more than 75 projects have been completed, including the development of a new business and operating model, the completion of radical business process redesign initiatives, and the implementation of a new IT system, etc. Various improvement approaches were employed, however, mostly based on the Six Sigma methodology. The Change Programme reported the significant improvement of operating profits, ROI, and business volumes. The increasing competitive conditions highlight the importance in reducing the operating costs, and increasing productivity. Thus, company A has continued to improve the operational efficiency and effectiveness of its business process to strengthen the quality of services for customers. In brief, Six Sigma has been adopted as a strategic initiative to drive the competitive success towards the company's vision.

To understand how company A conducted BPI projects, three Six Sigma projects were recommended (EA1). The improvement team leaders, indicated by codes CA1, CA2, and CA3, were assigned to provide information and relevant documentation. The project list is summarised in relation to key informants in Table 4.2 below.

Table 4.2: The list of improvement projects at company A

Project code	Business process improvement projects	Key informant
PA1	Saving account opening cycle time improvement	CA1
PA2	Credit card renewal process improvement	CA2
PA3	Housing loan origination process optimisation	CA3

4.2.2 The initiation of improvement projects

The initiation of three projects shared various factor combinations. Four initiation factors were observed. Firstly, the improvement project was typically initiated by the vision and enthusiasm of the CEO and top management (EA1). The team leaders (CA1, CA2, CA3) also agreed that the *top management* was recognised as the most important factor of the BPI initiation. This reflects the significance of top-down management in Thai culture, which was determined as having a high Power Distance (PDI) in Hofstede's study[4]. Secondly, the *highly competitive market* was another factor that pressured the company to improve the quality of products and services. For instance, PA3 was initiated to maintain the leader status in providing the fastest housing loan approval in the market (CA3).

The third factor was *high demands and expectations* from customers. Considering customers as its first priority, the company has to provide better experiences for satisfying customers' needs and expectations (EA1, CA1, CA2). Both PA1 and PA2 were initiated based on the voice of customers received through a branch survey and complaints from a call centre. To enhance customer satisfaction, it was critical to improve the *operational process problem*, which was the final factor. PA3 had the objective of optimising the operations process cycle time to ensure the speed of loan approval met customer expectations.

4.2.3 The implementation of improvement projects

The implementation of improvement projects was followed the DMAIC approach, resulting from the adoption of Six Sigma as a core methodology. The definition of DMAIC was previously described in Section 2.1.1. This section describes each phase of project implementation employing evidence from three investigated projects.

4.2.3.1 Define

The objective of this phase is to define the critical to quality attribute (CTQ), aiming to translate into a measurable and quantifiable goal of the improvement project towards a customer-focused approach. In order to define the CTQ precisely, three criteria were

[4] Hofstede's study of cultural dimensions, http://www.geert-hofstede.com/hofstede_thailand.shtml, accessed date: 15th July 2009.

considered. The first criterion was an understanding of *voice of customer* (VOC). A range of methods were used to gather customer information including; specifically designed surveys in PA1, PA2, and PA3; customer complaint data from branches and call centres in PA2 and PA3. The regular customer survey results were sometimes used as supporting information to identify VOC as found in PA1. Alternatively, market research was applied to identify the VOC, which facilitates the benchmarking with other competitors (CA3).

The second criterion was the *voice of employee* (VOE). All investigated projects gathered the VOE through interviews (on-site interviews), and an employee satisfaction survey. The investigation of VOE through the employees at different organisational levels would reflect insights that helped in justifying the CTQ of the project more accurately (CA2). Empirical evidence suggested three areas of VOE that should receive focus including: time taken, convenience of customers, and existing operations processes. To depict how company A translated VOC and VOE into CTQ, empirical evidence from project charters is tabulated in Table 4.3.

Table 4.3: The VOC, VOE, and CTQ of improvement projects of company A

Project	VOC	VOE	CTQ attribute
PA1	• To open a saving account at bank A takes longer time compared with other banks.	• The existing application is quite complicated and difficult to complete. • The account opening process requires too many documents and signatures.	Customer will receive new saving account within 6 minutes with hassle-free process after receiving an application form.
PA2	• Customers prefer to have a renewal credit card by mail, rather than picking up at issuing branch.	• It's time consuming to provide renewal credit card to customer. • While there is no supportive system, we have to spend much time on documents and on finding the card.	Customers will receive their renewal card 14 days before expiry date by the new mailing system.
PA3	• We have not received the housing loan approval within promised time. • Other banks can provide the approval result faster.	• Some reworks occur during the operations process. • There is waiting time for transferring the document from other departments. • Required documents are not complete before submitting an application.	The average housing loan origination cycle time will be reduced by 30% after optimizing the new process.

Further to the VOC and VOE, the executive's viewpoint was the final criterion for defining the CTQ of the project (EA1, CA2). The insights from senior executive helped align the CTQ with the strategies of the company. The CTQ must be reviewed and approved by CPCS towards the project charter presentation, before proceeding to the next phase.

4.2.3.2 Measure

The measure phase was intended to investigate the existing performance of the operations process in relation to the CTQ defined in the prior phase. *Process mapping* was employed in all projects as the first step. This aimed to identify all related activities from end-to-end process. The operations process problems were typically found during this step (CA1, CA2). The process mapping was drawn using the same standard which is applicable throughout the company. Both senior executive and team leader suggested that a *walk-through* process and *on-site interview* with operations employees were needed to validate the process mapping. At this stage, the *brainstorming* between improvement team and business owner was necessary to justify the critical measures, responding to the goal of project (CA1, CA2, CA3).

After establishing reliable measures, the important step was to *collect the statistical data.* Several tools and techniques were used collaboratively including; work study method, time and value mapping, distribution graph, pareto chart, etc. Key measures in the operations process can be viewed in three categories: 1) cycle time, 2) defect rate/ delay, and 3) resource consumption (EA1). Improvement leaders noted that IT becomes an imperative mechanism to support the statistical data collection, rather than based on a traditional approach (CA2, CA3). The PA3 showed the advantage of IT for collecting the statistical data, by retrieving the operating time of all activities in the process for an effective analysis.

4.2.3.3 Analyse

This phase seeks to identify the root causes of the problem from collected data in the measure phase. Several tools and approaches were used for providing the reliable results. In PA1, cause and effect analysis was utilised to refine the important variables before analysing through Failure Mode and Effect Analysis (FMEA) to finalise the

critical variable of an improvement process. The analysis of PA3 was found to be an efficient approach by linking the statistical data into the process mapping. This approach can help in visualising the end-to-end process through the rich statistical data necessary in justifying the critical areas for improvement (CA3).

Empirical evidence suggested that this phase required high collaboration between the improvement team and business owner. It is also important to justify the critical areas that need improving, responsive to business requirements (EA1). The author observed that the extent of statistical data analysis applied in the financial institution was less than that often found in manufacturing-projects. Furthermore, human factors should also be taken into consideration, rather than focusing only on statistical data. At company A, the analysis approach incorporated the statistical data and business requirement, together with human factors, aiming to broaden the range of analysis to provide an improvement solution (CA1, CA2, CA3).

4.2.3.4 Improve

The analysis results were used for generating alternative solutions to improve the existing business processes. The empirical evidence showed that improvement solutions can be categorised in four types, as shown in Table 4.4. Team leaders explained that selected solutions were typically quick fix and/or redesigning the process, because of the low investment cost (CA1, CA2, CA3). Only PA1 showed application of re-engineering and the development of IT system as improvement solutions. The selection of the appropriate solution should be justified by the consensus of related stakeholders. This aim is to achieve the highest improvement value in terms of cost/benefit, reflecting all stakeholders' requirement. Approval from CPSC was required before executing the improvement solution.

Table 4.4: The four types of improvement solutions

Improvement solution	Objective
Quick fix solution	To immediately solve the operational process problems with less effort and cost.
Process redesign/ Process streamlining	To eliminate the non-value added activities in the process by providing the new working procedure to the operational process.
Process Reengineering	To radical change the operational process with highly effort and cost. The factor of change and effect are critical for execution the solution.
The development of supporting IT system	To incorporate new IT system for enhancing the operational process.

In this phase, a senior executive raised the issue about the lack of a constructive framework for prioritising improvement solutions (EA1). He also suggested that key criteria should be identified for selecting the most appropriate solution, rather than a subjective judgement, as at present. At this stage, the author observed that the improvement solutions were driven by the initiation of top management at company A.

4.2.3.5 Control

Two main tasks of the control phase are to establish the monitor and control plan, and summarise the results of the project. After executing the improvement solution, the project team was responsible for developing the process control plan for the improved process. This could be a statistical control chart or the working procedure as found in PA1, PA2, and PA3. Technically, the team has to monitor the improved process for three months before transferring the responsibility to the business owner. The transition period was a crucial phase for sustaining the continuous improvement effort within the organisation (EA1, CA1, CA2, CA3). Less empirical evidence was found related to the control phase at this stage.

For the second task, the project team was in charge of summarising the results of the project to CPSC. The archival documentation showed that the closing-project report generally included a summary of changes, and the benefits of improvement. In terms of benefits, three criteria were identified including: hard savings, potential savings, and soft savings. The first two were explicitly reported considering financial equivalence, whilst the 'soft saving' was only the belief of the team that the implemented solution will enhance customer satisfaction, but without supporting evidence or statistical data.

The empirical findings revealed that points of concern ranged from an ineffective transition stage to the lack of constructive measurement of improvement project outcomes. These two issues could affect the sustainability and continuity of the BPI adoption. Therefore, the author considered that these issues were important, and worth pursuing in the second phase of this research. In the next section, the measurement of project outcomes will be investigated to expand areas for further study.

4.2.4 The measurement of improvement project outcomes

Empirical evidence suggested that outcomes of the improvement project were measured based on three main criteria. Firstly, project outcomes were measured in terms of *internal operations.* This consisted of two aspects: 1) operations process, and 2) operations employees. The operations process was measured directly by statistical data such as cycle time reduction in PA1 and PA3, service level agreement achievement in PA2 and PA3, work in process reduction in PA3, error reduction in PA1, and non-value added and wastage elimination in PA1 and PA2 consecutively. The operations employee aspect was assessed in terms of satisfaction, attitudes, productivity, and skill development and training; resulting from the outcomes of the BPI project. Team leaders pointed out that the employee survey results could help identify the problems after implementing the solution, to resolve and adjust the solution effectively (CA1, CA2, CA3).

Secondly, the *customer dimension* was an important measure of project outcomes. Empirical evidence showed less attention to measuring the outcomes of project from the customer perspective. A senior executive explained:

> "Theoretically, the measurement of improvement project outcomes from a customer perspective is useful in justifying the true value of a project.....From the business viewpoint it is sometimes not worth investing a lot of money to measure the outcomes of the specific project (EA1)"

The third criterion was *cost dimension*. As mentioned above, the three types of cost saving are hard savings, potential savings, and soft savings, the first two of which can be converted to money-saving equivalence. For example, in PA2, the reduction of wastage (a hard saving) was calculated to net an annual saving of 2.4 MB; the redesigned process (a potential saving) can eliminate non-value added activities, equivalent to 15.6 MB; while the new process also enhanced customer satisfaction (a soft saving) which could be converted to long term profitability. It could be seen that cost saving was an important criterion for evaluating the success of an improvement project. The project team leader pointed out that:

> "The senior executive will justify the success of an improvement project by considering the amount of money saving after executing the improvement solution....This is very crucial to achieve the cost saving goal that is an important project evaluation criterion (CA3)"

Key observations suggested that top management was concerned with project outcomes in terms of internal operations and cost saving, rather than the subjective measures related to customer perspective. A customer may not directly perceive that the improved quality of service has resulted from the improvement project, however, team leaders strongly agreed that the outcomes do affect customers (CA1, CA2, CA3). The author therefore considered this significant, in further examining the ways in which a BPI project could improve the quality of service to enhance customer satisfaction.

4.3 CASE STUDY B

Company B is recognised as the leading consumer finance service provider worldwide. Under the theme of 'growth as a process', various improvement initiatives have been driven across the company to expand performance by focusing on 'customer value' which is considered the major driver of growth.

4.3.1 BPI adoption background

Since the 1980s, a number of approaches have been applied for improving business performance and profitability at company B. The Quality Leader explained that in the early stage of process improvement, the 'workout' initiative was used to get all staff in the operations to join in brainstorming for improving the process, encouraging people to think about process improvement from their own viewpoint (EB1). Workout was an important foundation to drive change towards business process improvement within company B.

In 1995, Six Sigma was initially introduced as a corporate initiative by the vision of CEO. This introduction of Six Sigma has been widely recognised as a dramatic success, and has become a crucial part of the company culture. Six Sigma has been widely adopted as core improvement methodology, and embedded in all functions at company B (EB1). The main approach of Six Sigma adopted in the financial services division was process-based, rather than focusing on intensive statistics as in the manufacturing divisions. Six Sigma was introduced in the belief that the company must delight the

customers and search for new ways to deliver them with products and services that exceed their expectation. The key concepts of Six Sigma were provided as the following in Figure 4.3.

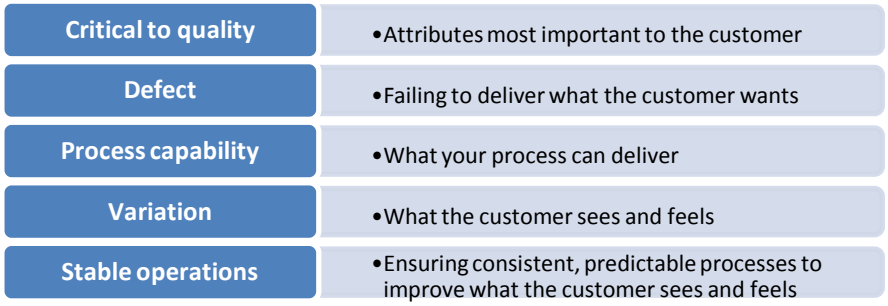


Figure 4.3: Key concepts of Six Sigma methodology at company B

After the breakthrough success of Six Sigma adoption, Lean has become the second generation of BPI approach widely disseminated throughout company B since 2005. Similarly, the process-based Lean concept was considered appropriate to the financial institutions. Currently, Six Sigma and Lean continue as the two main BPI methodologies, working collaboratively in all functions for improving the process under the customer-focused approach (EB1).

The quality department is responsible for determining that all BPI initiatives align with company B's worldwide strategy. The qualified Master Black Belt (MBB) are core members of the quality department. MBB perform as improvement team leaders who work collaboratively with cross-functional teams and business owners. The role of MBB is to facilitate, implement, execute, deploy, and sustain the BPI initiative within the organisation. To explore the existing phenomena of BPI adoption, two MBB, indicated by codes CB1 and CB2, were interviewed to investigate how company B conducted improvement projects. Three projects were described, detailed at Table 4.5. Supporting documentations were also presented, but not given to the author, because of the confidentiality issues of the company.

Table 4.5: The list of improvement projects at company B

Project code	Business process improvement projects	Key informant
PB1	Car leasing process improvement	CB1, CB2
PB2	Auto loan (used car) process improvement	CB1, CB2
PB3	Auto loan (time to cash) process improvement	CB1, CB2

4.3.2 The initiation of improvement projects

The BPI methodologies have become part of company B's culture, which was considered different from company A and C, which are in the earlier stages. The initiation factors, however, shared some similarities in both case studies. A MBB initially explained that an improvement project was initiated, pertaining to two different types of customers. An explanation is tabulated in Table 4.6 below.

Table 4.6: Two main types of customer of company B

Type of customer	The initiation of improvement project
Business to Business (B2B)	• Improvement Team site visiting (regularly) mainly focused on identifying the operational process problem • The request from customer to improve the efficiency of process to stay competitive among the market
Business to Customer (B2C)	• Regular customer satisfaction survey results • Complaints from customers related to the financial products and services • Call centre and customer service information

The first two initiation factors were *high demands and expectations* from both types of customers, and *operational process problems* that needed improvement for providing customers with better product and service quality. PB2 resulted from customer requests (demands), whereas PB1 and PB3 were initiated by the detection of operational process problems by an improvement team site-visiting. The *highly competitive market* was the third factor that drives the company to improve the business process. At this point, the MBB described that 'net promoter score' (NPS) has been applied to understand the existing market situation compared with other competitors. PB1 and PB2 were initiated based on a highly competitive market factor, employing the NPS results.

Not all improvement projects explicitly presented that the initiation resulted directly from the top management, as found in the two other case companies. The Quality Leader revealed that all projects were developed under the standard policy of company B worldwide (EB1). Thus, the top management and policy could be considered as another initiation factor that was investigated from company B.

4.3.3 The implementation of improvement projects

This section explains the implementation cycle of the three projects investigated. In contrast with the other two cases, company B has more than twenty years experience of BPI adoption. This resulted in a more sophisticated implementation approach, which was not based solely on one individual methodology. The implementation cycle consists of five steps as clarified in Table 4.7 (CB1, CB2). This was closely related to the DMAIC approach of Six Sigma; however, some steps were adjusted particularly for financial institutions.

Table 4.7: The implementation cycle at company B

Step	Improvement cycle
1	Identifying the voice of customers (VOC)
2	Measuring the gap for improvement
3	Defining the improvement solutions
4	Selecting the improvement solution
5	Maintaining the process performance

At company B, several methods and techniques were used towards the implementation cycle. These are summarised in the following Table 4.8.

Table 4.8: The summary of methods and techniques used at company B

Tools	Objectives
New Product Introduction (NPI)	• This method is the market assessment for launching new products • It aims to understand insight of existing market before developing new product
DMAIC	• DMAIC is an important method of six sigma methodology • The DMAIC provides the systematic approach for improving the business process efficiently and effectively.
Lean	• Lean is normally applied for improving the efficiency and effectiveness of end-to-end process • Lean aims at eliminating seven types of wastes in the process
Net Promoter Score (NPS)	• This method is used as “thermometer” or “gauge” for systematically measuring the voice of customer (through calling-survey) • This is a kind of survey, aiming to indicate the loyalty of customers for identifying improvement areas • NPS is used for collecting the VOC regularly • This method also helps in measuring the customer satisfaction before and after launching any process improvement initiatives
Test and Learn	• This technique is used for pilot testing to identify the problematic issues in the improved system and process • “Test and learn” is normally used before full launching or executing any improvement solutions

Tools	Objectives
Business Process Measurement System (BPMS)	• The BPMS is used to set up the measurement before executing the new solution or new process • The BPMS is normally developed for a specific business process
Change Acceleration Process (CAP)	• This framework is used for motivating the people regarding the "change" in any process within the organisation • This can be considered as change management approach.

4.3.3.1 Identifying the voice of customers (VOC)

The first step was to identify the *voice of customers* (VOC). This step aimed at justifying the most important attributes from the customer perspective or critical to quality (CTQ). The empirical evidence illustrated that various sources were employed to gather customer information, including NPS scoring in PB1 and PB2, customer survey and complaints in PB2 and PB3, and site visiting in PB1, PB2 and PB3. A MBB suggested that the NPS was a very useful method in gathering the real VOC (CB2). The NPS methods also helped in benchmarking the VOC towards other competitors in the same market segment. This feature of NPS was considered different from the regular customer survey used in other case companies (CB1, CB2).

Besides the VOC, the MBB emphasised the importance of understanding the *voice of employee* (VOE). This could be gathered during the site visiting. The reason to identify the VOE was to reflect how employees perceived the existing process performance. This helped to identify the potential improvement areas related to time-saving, and convenience of customers (through observation), and problems in the operations process (CB1, CB2). Briefly, both VOC and VOE were used to justify the CTQ before proceeding to the next step.

4.3.3.2 Measuring the gap for improvement

This step measures the gap in justifying the possible improvement areas. The cross-functional team started by gathering the required data regarding the problem statement, which was based on defined CTQ. Both quantitative and qualitative data should be gathered in this step, aiming to define the key gap (CB1, CB2). The MBB highlighted that:

> "The measuring approach used in the financial services is different from that of manufacturing. Besides collecting statistical data, it is important that we need to gather the qualitative data from the operations process such as employee perception, site-visiting results, and our observed issues etc. Particularly in the financial services, we employed both types of data to identify the possible areas for improvement (CB1)".

In PB2, the NPS results suggested that the turnaround time before loan approval was the most significant factor in staying competitive in the market. The improvement team, therefore, gathered *statistical data* and conducted *site-visiting* through the operations process. The application inventory was identified as the key gap for improving the approval process. In this step, the key gap should be justified based on the cross-functional team consensus towards the *brainstorming* approach (CB1, CB2).

4.3.3.3 Defining the improvement solutions

The important task was to define the improvement solutions in response to the gap identified. The *root cause* of the problem was analysed before identifying the *possible solutions* for improving the process (CB1, CB2). In this step, the NPS data was coded and categorized regarding criteria such as courteousness, responsiveness, turnaround time, etc. The top three reasons were summarised in terms of 'like' and 'do not like' based on customers' viewpoints. The analysis of NPS score is not restricted to one methodology; the analyst requires both technical skills and experiences in financial services to define the improvement solutions (CB1). Empirical evidence showed that the solutions were *quick-fix* as found in all investigated projects; and *process redesigning* in PB1 and PB2. The author observed that the reengineering approaches were rarely found, resulting from the continuous improvement effort at company B.

4.3.3.4 Selecting the improvement approach

In this step, it was important that the improvement team work collaboratively with the business owners to select the most appropriate solutions for improving the process. The selection of a solution for tackling the problem was very imperative for the improvement team (CB1, CB2). The simple equation used for selecting the improvement approach was a balance between 'quality' of the project and the 'acceptance' level of people within the organisation, as shown in Figure 4.4.

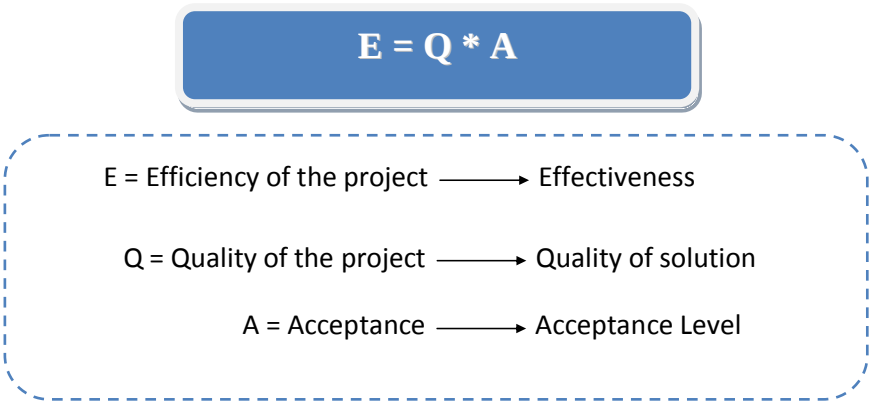


Figure 4.4: The improvement project selection equation at company B

After selecting the solution, *pilot-testing* was needed before executing the improvement initiative (CB1). The *test and learn* approach was typically employed at this stage. The feedback from the pilot-testing site was used to achieve the best solution. After that, the improvement team was responsible for developing the plan for full implementation.

4.3.3.5 Maintaining the process performance

After executing an improvement solution, the BPMS (Business Process Measurement System) was applied to set up the measures in the improved process. The BPMS helped in monitoring and controlling the variation in the operations process, aiming to ensure the stability for delivering the consistent services to customers. Similar to the control phase of DMAIC, the improvement team has to transfer knowledge and know-how to the business owner for maintaining process performance (CB1, CB2). Furthermore, the change acceleration process (CAP) technique was applied to encourage people to accept the change within the process. In summary, this step was critical in sustaining the continuous improvement effort within the organisation. The author, however, observed that less attention was paid to this step in the case company. The next section will broaden the way in which company B measures the outcomes of the improvement project.

4.3.4 The measurement of improvement project outcomes

The project outcomes were explicitly measured in relation to the *internal operations dimension.* Two aspects of operations processes and employees were applied to measure this dimension. Firstly, empirical evidence demonstrated the measures related to operations processes including: cycle time/ processing time reduction in PB1, PB2, and

PB3; WIP reduction in PB2 and PB3; Rework reduction in PB2; and non-value added elimination in PB3. Secondly, the acceptance level of employees was another criterion used to evaluate the outcomes of projects. This aspect was measured through various approaches such as an employee satisfaction survey in PB1, PB2, and on-site employee interviews in PB3. The MBB suggested that the on-site interviews provided the team with an in-depth understanding for delivering the high quality improvement solution with a high employee acceptance level.

The MBB agreed that outcomes of a project impact on the *customer dimension*. Nevertheless, a customer could not directly perceive that an improved quality of service resulted from any BPI projects (CB1, CB2). The NPS score was used in PB1 and PB2 for measuring the overall satisfaction of customers after improving the process. It was, however, difficult to justify a claim that higher customer satisfaction level resulted from a specific project, whilst other factors such as marketing, advertising, etc., may also enhance the satisfaction level. Therefore, the MBB suggested minimising irrelevant factors before employing the NPS score as supportive measurement of improvement project outcomes (CB2).

The most important criterion for measuring the outcomes of BPI project at company B was the *cost saving dimension*. From the business standpoint, top-management normally justified the success of an improvement project based on the cost dimension. All outcomes related to operations processes, and employees were required to be converted into cost saving equivalents, presenting to top-management as the key deliverable outcomes of the project (CB1). In summary, *internal operations, customer and cost saving* were explored as critical dimensions for measuring the BPI project. Empirical evidence suggested explicit measures of internal operations and cost, whereas the measures related to the customer dimension again appeared under-represented. Key findings were highlighted including: 1) the importance of distinction between process and customer perspectives, and 2) the different types of improvement project relative to the measurement approach. These two aspects were considered as an important basis for developing the measurement of BPI projects. More details will be discussed through the cross-case analysis in Section 4.5.3.

4.4 CASE STUDY C

Aiming to be the strongest, the most innovative, and the most proactive Thai financial institution in serving customers with world-class service quality and efficiency, company C has continued developing the organisation and offered financial product initiatives plus excellent service delivery to match the slogan, "Towards Service Excellence"[5]. For achieving the mission, company C places the central emphasis on the optimal benefits to customers, shareholders, and employees.

4.4.1 BPI adoption background

Company C has continued developing and improving all business functions through various initiatives to achieve optimal operational efficiency, with a customer-focused approach. In 1995, Business Process Reengineering (BPR) was first adopted at company C, aiming at radically improving both efficiency and effectiveness throughout 454 branches' operations. As a result of BPR implementation, the company was recognised as the most advanced computerised retailer. The BPR approach has, however, been widely criticised for focusing on reengineering operations at branches only, rather than improving end-to-end business processes. This resulted in a decline in the importance of BPI at company C during the following period.

The Executive Vice President explained that company C has not adopted any BPI methodologies in its overall banking business after BPR implementation (EC1). Each department has, however, adopted some methodologies on a limited scale such as a TQM implementation in the Trade Finance department, Sale and Service channel improvement using the Six Sigma approach, and the Housing Loan origination process improvement through Lean concepts etc. The structure of the process development department was gradually reformed (EC1). The role of process development specialist, which was previously responsible for the implementation of strategic initiatives e.g. BPR, was changed to an internal consultant who facilitated business units in improving operations processes (EC1).

From August 2009, however, company C announced a new initiative to employ Six Sigma methodology throughout its business functions. This would be an immense

[5] Annual Report 2008, Company C.

opportunity to investigate how company C conducts the existing BPI project, intending to provide them with practical suggestions for the successful implementation of Six Sigma in 2010. Therefore, three improvement projects were examined. Key informants were improvement team leaders and process development specialists, who performed as the internal consultant and facilitator of the projects under scrutiny. Before further exploration, three improvement projects were listed and indicated by codes in Table 4.9.

Table 4.9: The list of improvement projects at company C

Project code	Business process improvement projects	Key informant
PC1	Sale and service quality improvement	CC1
PC2	Customer service quality improvement: Loan notification process	CC2
PC3	Loan approval process improvement	CC2

4.4.2 The initiation of improvement projects

At company C, each department conducted improvement initiatives separately, using different approaches, because a core methodology had not been employed throughout the organisation as with cases A and B. Empirical evidence indicated that the initiation was based on a combination set of four factors. The first factor was the *top management and policy*. The senior executive of each department was responsible for initiating the improvement initiatives to align with the organisation policy and direction (EC1). Team leaders also agreed that top-management and policy was the most important initiation factor (CC1, CC2).

The second factor was the *highly competitive market*. An increase in competition pressured the company into initiating the improvement project. Furthermore, *high demands and expectations* from customers was another factor that drives a company to adopt the BPI initiative under the customer-focused approach. These two factors were key drivers of the improvement project initiation. PC1 and PC2 showed that a highly competitive market and demands from customers were viewed as important initiation factors (CC1, CC2). Finally, the last factor was the *operational process problem*. As found in PC3, the project was the initiation of a senior executive requesting the team to identify the problems in the operations process.

4.4.3 The implementation of improvement projects

In contrast with case companies A and B, the implementation approach of an improvement project was based on specific techniques applied to an individual project. Nevertheless, the Vice President of Process Development Department suggested that the basis of implementation approaches were similar, following the widely used methods of BPI methodologies (E7). Technically, the implementation was closely related to the DMAIC methods of Six Sigma (E7, CC1, CC2). This section therefore analyses the way in which company C implemented the improvement project in terms of the DMAIC sequence as follows.

4.4.3.1 Define

The first step was to define the critical problems responsive to customers' requirements. The team leader suggested that it was important to define the focus of the project from the *voice of customer* (CC1). Various approaches were used for gathering the VOC. The specific-designed survey was employed in PC1 and PC2, whilst customer complaints and site-visiting were applied jointly in PC1, PC2 and PC3. At this point, the regular survey results were also used as supporting evidence to identify the VOC (CC2).

Besides the VOC, it was important to define the problems in the existing operations process through the *voice of employee* (VOE). The vice president of process development department emphasised that:

> "Particularly in financial service, it is important to understand the operations process from operations employees' perspective. This would reflect the real problems occurred in the existing phenomenon. The results would help us to justify the critical to quality problem that urgently needs an improvement (E7)"

The VOE was gathered through site-visiting and interviews in all investigated projects. The team leader proposed that interviews should be conducted with employees at different organisational levels; e.g. operations manager and operations staffs; with the aim of collecting broad viewpoints (CC1). After both VOC and VOE were defined, the improvement team was in charge of identifying and prioritising the CTQ problem. The initial results were submitted to the business owner and senior executive for deciding on the most appropriate CTQ before pursuing the next phase of the project.

4.4.3.2 Measure

This phase identified key measures relating to the defined CTQ. The measures differed depending on the type of improvement project. For example, the CTQs of PC1 and PC2 related to the quality of service during service encounter: it was therefore vital to measure the data from customers. In PC1, the measurement system was designed for tracking the quality of service provided by contact employees, as well as specifying customer perception of service quality. It was crucial to gather data reflected the CTQ problem (CC2). At this point, IT was used for retrieving the statistical data, which would provide more accurate information. The traditional customer survey was still employed in PC2. Regarding the CTQ of PC 3 related to the operational process problem, *process mapping*, *walk-through process*, and *statistical data collection methods* were employed to gather all relevant data for analysis in the next phase. The internal consultant suggested that *brainstorming* was an important technique used to justify the critical measures, resulting from the consensus between the improvement team and the business owner (CC2).

4.4.3.3 Analyse

The objective of this phase was to analyse the data gathered in the measure phase. The analysis methods and approaches relied on the statistical data analysis used in the BPI methodology, particularly of Six Sigma. The focus was on identifying the most significant problem requiring urgent improvement. The analysis approach employed in financial services should also consider qualitative data, e.g. voice of employee, observed soft issues etc., rather than using only the statistical data found in manufacturing (CC1, CC2). Various analysis methods were used including: cause and effect diagram and root cause analysis in PC1 and PC2; value stream mapping in the PC3; and basic statistical analysis, e.g. hypothesis testing, and correlation study in all investigated projects. It was also necessary for the business owner to participate in this phase to reflect business viewpoints so as to reach the appropriate solution in the next phase.

4.4.3.4 Improve

This phase aimed at selecting the improvement solution for the critical problem analysed in the prior phase. The team leader emphasised that the solution must be

selected bearing in mind the brainstorming results of the team and all relevant stakeholders (CC1). Furthermore, the selection should be based on multi-criteria, including the impact on the operations process and customer perspectives, investment cost, resource and time consuming, and the expected benefit of the improvement solutions (CC2). Empirical evidence illustrated that solutions could be categorised as four main types including: 1) quick fix solution in PC1, PC2 and PC3; 2) process redesign in PC1 and PC2; 3) process reengineering in PC3; and 4) the development of IT system in PC1 and PC3. Each project could employ more than one type of improvement solution.

4.4.3.5 Control

Two important tasks in this phase consisted of: 1) establishing the monitor and control plan, and 2) transferring the knowledge to business owners. The improvement team played an important role in executing these two tasks in maintaining the performance of the improved process. Generally, the team observed the way in which the business owner monitored and operated the process over a period of at least three months. This aimed to encourage and sustain the continuous improvement effort of BPI adoption. The team leader suggested that key measures in the control plan should be translated into individual employee performance-based measures (CC1). This would help encourage employees to provide a better quality of product and services to the customers. A reward and recognition programme could also be used for motivating employees to achieve the goals of BPI adoption.

4.4.4 The measurement of improvement project outcomes

Empirical evidence suggested that the improvement project outcomes were measured based on three criteria. The first criterion was the *internal operations dimension.* This was measured through both aspects of the internal operations process and the operations employee. In PC3, the outcomes of the project were measured directly from the operations process aspect including the reduction of processing time, work-in-process, errors and reworks, non-value added activities, whilst PC1 and PC2 mainly focused on cycle time reduction to enhance the quality of customer service. Besides the first aspect, all investigated projects were measured in term of the operations employee. The employee satisfaction index was used to investigate the attitude towards the

improvement project related to changes in PC1, PC2 and PC3; the improved skill in PC1 and PC3; and improvement of productivity in PC3.

The *customer dimension* was the second criterion. Key measures of customer dimension can be clarified as two aspects including: 1) 'what' customers received after improvement such as better speed, more accuracy, and higher flexibility of service; 2) 'how' customer perceived service quality after improvement such as reliability, responsiveness, and assurance etc. (CC2). Two main approaches were used to measure the improvement outcomes from the customer perspective including a customer satisfaction survey and a random-calling method in PC1 and PC2. The random-calling practices in PC1 supported the objective to investigate how the project outcomes reflected on the customer dimension related to service quality, as proposed in the initial conceptual framework. The author, however, observed that PC3 was not measured through the customer dimension regarding the focus of the project. This finding suggested that the different characteristics of the project should be considered in developing the measurement framework of the BPI initiative.

The *income generation* was the final key measure observed from improvement projects. The team leader highlighted that profit was the most important criterion from a business standpoint (CC1), in belief that the adoption of BPI methodology helped improve the process efficiency for cost-reduction purposes, as seen in the manufacturing sector. Empirical evidence showed that improvement projects were generally measured in terms of cost reduction (saving), generating income, and opportunity for gaining more profitability.

In summary, it was important that the measurement of improvement project outcomes should be based on multi-dimensional criteria. The vice president of process development department (E7) emphasised that the integration of these three criteria in the measurement framework of BPI project was appropriate, particularly in financial services. This would help in sustaining and facilitating the continuous improvement effort within the organisation.

4.5 CROSS CASE ANALYSIS

All case studies were analysed in the preceding sections and results were summarised in the case study database, to be further employed as empirical evidence in the cross-case analysis stage, which will now be described. The *unit of analysis* thus focused on the case company level. Many types of matrixes and pattern-matching approaches were applied critically throughout the cross-case analysis process, aiming to cluster and organise empirical evidence into accessible format for drawing valid conclusions, together with emerging the theory elements (Miles and Huberman, 1994; Yin, 1994; Voss *et al.*, 2002).

This section therefore presents key empirical findings from the cross-case analysis. These results provided an understanding 'how financial institutions conduct the BPI project for improving service quality, towards customer satisfaction', which addresses the first research question. Three main important stages of the BPI project will be clarified from Section 4.5.1 to 4.5.3. Each stage was analysed, considering the criteria, common approach and techniques used, and distilling the critical findings, reflecting upon the three in-depth case studies.

4.5.1 The initiation of BPI projects

Initiation was considered as the first stage of the BPI projects. Empirical findings suggested that BPI projects were initiated based on different factors combinations. All projects in three case companies, however, shared four main initiation factors. Firstly, all senior executives strongly agreed that the *highly competitive market* was an important factor to adopt any BPI methodologies, aiming to differentiate from other competitors, and stay competitive in the market. This factor was a significant pressure that drives all case studies to improve the quality of financial products and services towards various BPI methodologies including Six Sigma, Lean, BPR, and TQM. The market information was derived from three main sources; market research and benchmarking employed in company A and C, and the Net Promoter Score (NPS) at company B.

The second factor was *high demands and expectations from customers*. Strong evidence was also found from case companies that customer demand/expectation was the first

priority of BPI initiatives. Senior executives suggested that this factor was especially important in highly-competitive markets, because companies need to enhance the customer experience to improve customer satisfaction level, compared with competitors. Customer demands information was gathered through customer survey, customer complaints via branch channel and a call centre, as in all case studies. Specifically, the NPS scoring was used in case company B. At this point, these first two factors were considered as 'external factors' that stimulate a company to adopt the BPI methodology.

Besides the first two external factors, *top management policy*, and *operational process problems* were represented as key 'internal factors' of BPI adoption. The operational process problems can be grouped as two sub-factors including: 1) the performance pressure from competitors' processes as found in case company A, and 2) the problems in operational process which were observed in case companies B and C. Whilst the first sub-factor was justified through the competitors' information towards statistical data and benchmarking, the latter resulted from both internal customers' requests and site-visiting observations.

The final factor was *top management policy*. The improvement team leaders and internal consultants in all case studies pointed out that top management policy was the most important initiation factor. The BPI projects in case companies A and C had been explicitly initiated by the CEO. The adoption of BPI at case B was, however, enforced by global policy from the corporate headquarters. At this point, the author suggested that the top management policy was closely related to the other three factors. It could be inferred that this factor resulted from the justification of top management because of a highly competitive market, high demands from customers, and operational process problems.

To summarise, the initiation of the BPI project was not based on any individual factor, but justified by a combinations of factors. The key findings pertaining to the initiation stage of BPI adoption are tabulated in Table 4.10, in which the codes (e.g. PA1) refer to individual improvement projects studied, within case companies A, B and C (see Table 4.1). The full list of investigated projects was previously provided in Table 4.1. The analysis results broaden an understanding of how initiation factors were conceptualised

by means of exploratory empirical evidence. At this stage, these four factors can be viewed as 'external' and 'internal' factors, which are also closely linked.

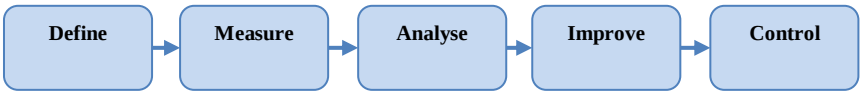
Table 4.10: The initiation factors of BPI projects

Initiation factors / Criteria	External factors		Internal factors	
	Competitive market	**High demands from customer**	**Operational process problems**	**Top management policy**
Improvement projects	PA3 PB1, PB2 PC1, PC2	PA1, PA2 PB2 PC1, PC2	PA3 PB1, PB2, PB3, PC3	PA1, PA2, PA3 PB1, PB2, PB3 PC1, PC2, PC3
Source of information/ Technique	1) Market research 2) Benchmarking 3) NPS score	1) Customer satisfaction 2) Customer complaints 3) Call centre information 4) NPS score	1) Competitors' information (statistical data/ benchmarking) 2) Site visit 3) Internal request	1) Company vision and strategy 2) Top management vision

4.5.2 The Implementation of BPI projects

The implementation of BPI projects from three case studies was observed using the DMAIC (Define, Measure, Analyse, Improve, Control) approach of Six Sigma framework as a structure, and this approach will be continued in the cross-case analysis section. Empirical evidence suggested that not all case companies formally used DMAIC, but all followed a similar approach. At this point, the author observed that company B had developed a specific approach for implementing improvement projects. This might be because company B has adopted various BPI methodologies, not focusing mainly on individual initiatives. The implementation approach hence represented the generic steps; however, it was consistent with DMAIC. Therefore, the implementation phases of each case study were tabulated to depict the common approach in Table 4.11. In this section, comparison matrices and pattern-matching were employed to analyse the empirical evidence from three case studies.

Table 4.11: The common phases of BPI project implementation

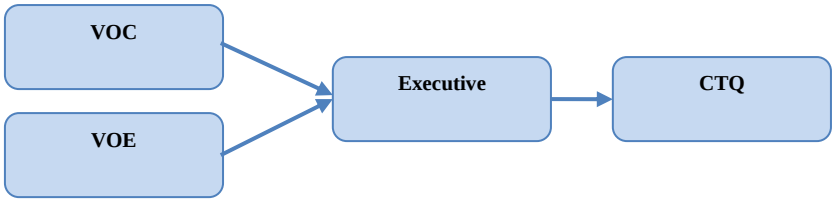
Case study	Implementation stages				
A	Define	Measure	Analyse	Improve	Control
B	Identifying VOC	Measuring the gap	Defining the improvement solution	Selecting the improvement solution	Maintaining the process performance
C	Define	Measure	Analyse	Improve	Control
Common phases of BPI project implementation					

4.5.2.1 Define

The objective of this phase was to define the critical-to-quality (CTQ) problem in the existing business process that required improvement (Snee, 2004; Hoerl, 2004; Hensley and Dobie, 2005; Anderson *et al.*, 2006). The critical problem should be identified from all stakeholders (Nave, 2002; Hensley and Dobie, 2005). Most improvement projects were started by understanding the voice of customer (VOC). Generally, specific-designed customer survey and customer complaints were used to gather the VOC, as found in all case studies. At case company B, the NPS was claimed as the reliable method using for gathering the real voice of customers, whilst site-visiting was applied to investigate VOC in case of B2B customers. At this point, the improvement team leaders suggested that regular customer surveys and benchmarking were used collaboratively as supportive information to justify the VOC.

The voice of employee (VOE) was also found very important in justifying the CTQ problem. Three important areas that should be focused upon pertaining to VOE included time consuming activities, convenience of customers, and problems in the operations process. The improvement team typically gathered the VOE by conducting face-to-face interviews with operations employees; this approach was processed together with site-visiting in all case studies. The VOE could also be collected from an employee satisfaction survey, which was conducted quarterly at case B. The improvement team leaders suggested that the VOE should be gathered from employees at different organisational levels for accuracy. To portray the important criteria for justifying the CTQ problem, different sources of information are tabulated in Table 4.12.

Table 4.12: Summary of source of information and common approach in define-phase

Criteria	Voice of customer (VOC)				Voice of employee (VOE)		
Improvement projects	PA1, PA2, PA3, PB2,PB3 PC1,PC2	PA2,PA3 PB2,PB3 PC1,PC2	PB1,PB2	PB1,PB2, PB3 PC3	PA1, PA2, PA3 PB1,PB2, PB3 PC1,PC2, PC3	PA1,PA2, PA3	PA1, PA2, PA3 PB1,PB2, PB3
Source of information/ technique	Specific-designed Survey	Customer complaints via branch and call centre	Net promoter score (NPS)	Site-visiting	Employee interview	Employee Survey	Site-Visiting
Common approach used to define CTQ							

After gathering the VOC and VOE, the executive points of view were important for justifying the CTQ problem. The insights from the senior executives helped in aligning the objective of the improvement project with organisational strategy. All senior executives emphasised that the CTQ problem should be defined based on the consensus of all relevant stakeholders through brainstorming; this reflects the suggestion of Hensley and Dobie (2005) and Antony *et al.* (2007). Empirical evidence shows that all investigated projects were approved by senior executives through the presentation of the project charter, which included the problem statement (CTQ), objective of project, project team members, project goal and expected outcomes, at the close of the defining phase.

4.5.2.2 Measure

This phase aimed to identify the key process measures responsive to the defined CTQ (Snee, 2004; Nonthaleerak and Hendry, 2006). The selected measures should be critical to customer requirements, intending to enhance customer satisfaction (Dahlgaard and Dahlgaard-Park, 2006). All investigated projects started by *mapping the existing process*, aiming to identify all related activities towards the end-to-end process. The improvement team leaders suggested that the *process walk-through* and *operations employee interviews* were necessary to validate the process mapping. Any problems in the operations process were typically found during the validation process. At this stage,

brainstorming between the improvement team and the business owner was essential to justify the key measures.

Empirical evidence suggested that key measures depended on the different characteristics of projects. All investigated projects, however, shared four important measures including: 1) Processing/cycle time, 2) Work in process (WIP), 3) Rework and error rate, and 4) Non-value added/wastage. To understand how these measures were defined, empirical evidence is tabulated in the Table 4.13.

Table 4.13: Summary of key measures and common approach used to identify key measures

Criteria	Key measures			
	Processing/cycle time	**Work in process (WIP)**	**Rework/ error**	**Non-value added/ wastage**
Improvement projects	PA1, PA2, PA3 PB1, PB2, PB3 PC1,PC2, PC3	PA3 PB2, PB3 PC3	PA1 PB2 PC1, PC3	PA1, PA2 PB3 PC3
Common approach used to identify key measures	**Process mapping** → **Walk-through Process** → **Employee/on-site interview** → **Brainstorming**			

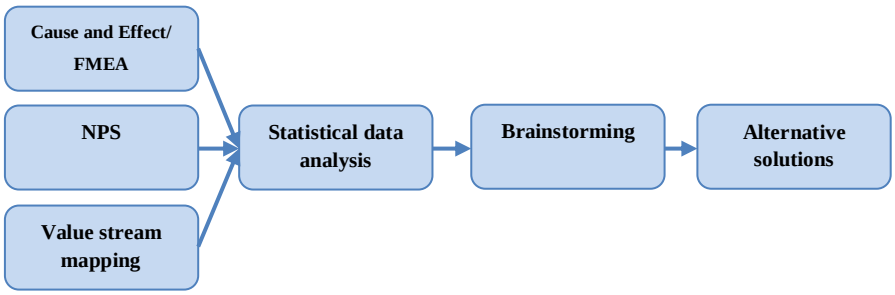
After establishing the reliable measures, the improvement team gathered *statistical data* for analysis in the next phase. The team leaders believed that less statistical data collection applied in financial service than in manufacturing. The senior executives highlighted the importance of human factor considerations (as reflected in the study by Hensley and Dobie, 2005) regarding the variation of a measurement system in service causing by both employees and customers. Particularly in the service sector, qualitative data should be gathered, e.g. operations employee and customer perception, besides measurements based on statistical information. Nowadays, IT was an important mechanism for measuring the statistical data, as used in companies A and C.

4.5.2.3 Analyse

In this phase, the gathered data was analysed to identify the root causes of the problems in the existing process (Nave, 2002; Snee, 2004). The analysis approach started by linking the measured data with the process mapping, as found in case studies A and C. The team leaders suggested that this approach was a constructive analysis that helped

them in visualising the end-to-end process for identifying the critical areas for improvement based on the statistical data. In this phase, several tools and techniques were employed to provide the reliable results. *Cause and effect analysis* was used to refine all measured variables, before proceeding using *Failure Mode and Effect Analysis (FMEA)* to finalise the critical attributes for improvement. The *basic statistical data analysis* was applied including, e.g. hypothesis testing and correlation analysis. At case companies B and C, *value stream mapping* was utilised as an important technique, particularly in Lean project. At company B, the NPS score was coded and categorised for root cause analysis purposes. To portray the tools and techniques used throughout the analyse-phase, and the common approach for analysis; empirical evidence was tabulated as in Table 4.14.

Table 4.14: Summary of analysis tools and techniques, and common approach in analyse-phase

Criteria	Tools and techniques in analyse-phase			
	Cause and effect/ FMEA	**NPS**	**Value stream mapping**	**Statistical data analysis**
Improvement projects	PA1, PA2, PA3 PB1, PB2 PC1, PC2	PB1, PB2	PB3 PC3	PA1, PA2, PA3 PB1, PB2, PB3 PC1,PC2, PC3
Common approach used in analyse-Phase				

It was necessary for the improvement team to apply brainstorming with the business owner to analyse the root causes of problems, and to identify the initial improvement solutions. Good collaboration among all stakeholders provided a balanced perspective of process and business. The author observed that an analysis was typically process-oriented, not concentrating on statistical analysis as normal in the manufacturing sector; which is in line with the study of Antony *et al.* (2007) in UK service organisations. It was therefore important to consider both qualitative and quantitative data (e.g.

employee and customer perception) for providing reliable results. Consequently, alternative improvement solutions were identified as the outcomes of this phase.

4.5.2.4 Improve

The focus of the improve phase was to select the most effective improvement solutions in order to tackle the root causes of the problems in the existing process (Snee, 2004; Nonthaleerak and Hendry, 2006). Three important criteria for selecting the most appropriate solution included effectiveness of improved process, cost and benefit, and customer impact. The improvement solutions should be selected based on the consensus among cross-functional team and stakeholders at a brainstorming session. At this point, senior executives from all cases highlighted that a systematic approach for selecting the improvement solution still needed further development, particularly for in financial services, rather than making a decision based on subjective judgements. Empirical evidence represented four types of improvement solutions as summarised in Table 4.15. Each improvement project can entail more than one individual solution throughout the improvement process.

Table 4.15: Summary of four main types of improvement solutions

Improvement solution	Objective	Improvement projects
Quick fix solution	To solve the operational process problems immediately with less effort and cost	PA1, PA2, PA3 PB1, PB2, PB3 PC1,PC2, PC3
Process redesign/ Process streamlining	To eliminate the non-value added activities in the process by providing the new working procedure to the operational process	PA2, PA3 PB1, PB2 PC1,PC2
Process reengineering	To change radically the operational process with huge effort and cost. The factor of change and effect are critical for this solution	PA1 PC3
The development of supporting IT system	To incorporate new IT system to enhance the operational process	PA1 PC1, PC3

As a key empirical finding, the author observed that the characteristics of improvement projects were critical to the measurement of project outcomes, which was important for development of the BPI evaluation framework, which is addressed as the final research question. To further analyse this important connection, a two-dimensional matrix was used to cluster all improvement projects investigated. The *internal impact* referred to the effect of an improvement project outcome on internal operations processes and employees, whilst the *external impact* applied to the effect on the service encounter and

customer. All investigated projects were clustered as Figure 4.5. This issue will be further discussed in Section 4.5.3, related to the measurement stage of BPI project outcomes.

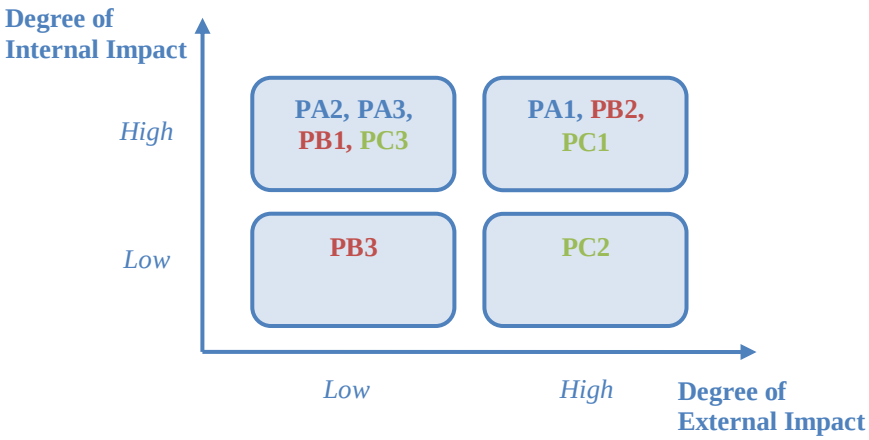


Figure 4.5: BPI project impact characteristic

4.5.2.5 Control

The control phase aimed to ensure that the improved process was sustained and institutionalised after the improvement team had completed the project (Nave, 2002; Snee, 2004; Nonthaleerak and Hendry, 2006). At company B, this phase was named as 'maintaining the process performance'. The focal objective of this final phase was, however, considered the same in all case studies. Two important tasks of the control phase included: 1) establishing and transferring of a controlling and monitoring system, and 2) summarising the results of the improvement project.

First of all, the improvement team was responsible for establishing the *monitoring and controlling system* for the improved process. Several techniques were observed to be employed in the monitoring and controlling system including; statistical control charts, dashboards/process scorecard, working procedures, and supporting IT system, etc. At company B, a specific technique, namely BPMS, was applied for monitoring and tracking the variation and problematic issues in the operations process. Technically, the improvement team continued monitoring the improved process for three months, before transferring the knowledge and know-how to the business owners. The author observed that the business owner is a significant factor in maintaining the monitor and control scheme in the improved process, which reflects an active role of business owner as suggested by Schroeder *et al.* (2008).

Secondly, the improvement team was in charge of summarising the results of improvement project for the top management. The archival documentations illustrated that the final report typically included outcomes and benefits, and summary changes in the improved process, which is also suggested by Hensley and Dobie (2005). The improvement team leaders emphasised that the outcomes of the project should be reported in financial terms, which was the most significant issue for justifying the success of improvement project from business perspective. At this point, less empirical evidence was found relating to the measurement of improvement project outcomes towards customer satisfaction. This highlighted the important issue relating to the lack of a constructive measurement framework, particularly for financial services.

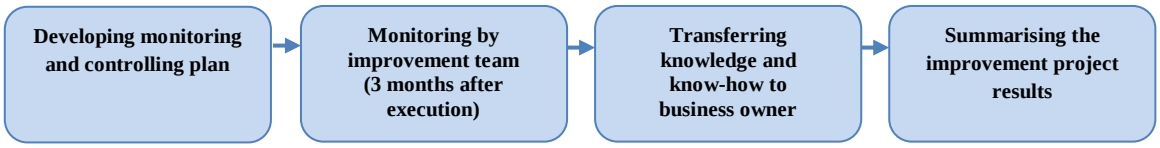


Figure 4.6: The common approach of control-phase

In summary, the control phase helped to ensure the stability and consistency of the operations process for delivery of the high quality of financial products and service to customers. Nevertheless, the key empirical findings revealed issues of concern including an ineffective transition stage and lack of effective measurement of improvement project outcomes, specifically for the financial service. These issues were found to cause problems relating to the sustainability and continuity of BPI methodology adoption at case companies A and C, and also reflect the empirical findings of Nonthaleerak and Hendry (2006).

4.5.3 The measurement of BPI project outcomes

This section aims to understand the important criteria for measuring the outcomes of BPI project in a financial institution. Three main criteria were applicable in all case studies. First of all, the BPI projects were measured in terms of the 'internal operations dimension'. This focused on measuring the outcomes of the BPI projects from two aspects: *operations process* and *operations employee*. The first aspect was measured through operational process metrics consisting of: 1) cycle time reduction (in projects PA1, PA2, PA3, PB1, PB2, PB3, PC1, PC2, PC3); 2) WIP reduction (in projects PA3, PB2, PB3, PC3); 3) Rework/ error reduction (in projects PA1, PB2, PC3); and 4) non-

value added and wastage elimination (in projects PA1, PA2, PB3, PC3). These outcomes can be measured objectively and explicitly through the statistical data, and quantified into financial saving. The improvement results could be justified by comparing before and after project implementation.

The second aspect aimed to justify BPI project outcomes from employees' perception pertaining to their: 1) satisfaction (in projects PA1, PA2, PA3, PB1, PB2, PC1, PC2, PC3); 2) attitudes towards changes (in projects PA1, PA2, PA3, PB3, PC1, PC2, PC3); 3) improved productivity (in projects PA1, PA2, PA3, PC3); and 4) developed skill (in projects PA1, PA2, PA3, PC1, PC3). Two approaches were employed to assess this aspect; an employee satisfaction survey and on-site interview as found in all case studies. A self-assessment approach could also be applied to measure the outcomes of BPI project towards operations employees (EA1). Empirical evidence suggested that to measure the outcomes of a BPI project through this aspect provided in-depth understanding for delivering an effective improvement solution with high employee acceptance level, thereby enhancing the quality of service to be delivered to customers.

The second criterion was the 'customer dimension'. Empirical evidence showed that some projects investigated were measured from the customer perspective, particularly in those impacting highly on external customers (e.g. PA1, PB2, PC1, and PC2). Conversely, ineffective measurement of the customer perspective was observed through improvement projects that focused on improving the internal operations process. All interviewees strongly agreed that the BPI outcomes helped improve quality of service as perceived by customers. The author, however, observed that the costs and benefits of the measurement were the main factors, resulting in the less attention to measuring the outcomes of the project from the customer perspective.

Several approaches were employed to measure the outcomes of the BPI project through the customer dimension including; specifically-designed survey and random-calling at companies A and C, NPS at company B, and regular satisfaction survey in all case studies. Two important aspects transpired from case C in understanding the outcomes of the improvement project from a customer perspective. It was important to separate the measures of; 1) 'what' customers receive from the service after improvement (e.g. better speed, more accuracy, higher flexibility, etc.), and 2) 'how' customers perceive

service quality after improvement (e.g. reliability, responsiveness, assurance, etc.). These two aspects could be applied to the quality of financial services, and assist the customer to make an evaluative judgement of their satisfaction. This key finding reflects an underlying concept of the initial conceptual framework that aimed to understand how customers perceived improved quality of service, resulting from the BPI adoption. Further clarification will be described in Section 4.6, the proposed theory model.

Finally, the *cost dimension* was necessary for measuring the outcomes of the BPI project. All interviewees strongly emphasised that this dimension was the most important criterion to justify the success of a project from a business standpoint. It resulted from the belief that the BPI adoption helped improve the operations process efficiency for achieving the cost reduction purpose. Empirical evidence showed that outcomes of the BPI project related to internal operations and customer dimensions could be converted to a cost saving dimension, which can be categorised into 'hard' and 'soft' saving aspects. The hard savings referred to direct cost saving resulting from the improvement of the operations process, while the soft savings referred to the indirect cost saving relevant to the improvement of customer dimension in that higher customer satisfaction should be translated into long-term profitability.

In summary, the existing criteria used for measuring the outcomes of the BPI project were identified from the case studies. The important dimensions, aspects, and key measures observed in the exploratory empirical study were summarised to understand the measurement stage of BPI projects in Table 4.16 below. The investigated projects were also coded pertaining to key measures identified in this table. The strengths and weaknesses were highlighted, aiming to develop an effective measurement framework for BPI projects, particularly in the financial services context. Next, the empirical findings in this section will be synthesised and articulated to propose the first theory model in Section 4.6.

Table 4.16: Summary of the measurement stage of BPI project

Dimension	Aspect	Key measures	Improvement projects coding
Internal operations process	Operations process	• Cycle time • Work in process (WIP) • Rework/ error • Non-value added/wastage	• PA1,PA2,PA3,PB1,PB2,PB3,PC1,PC2,PC3 • PA3,PB2, PB3,PC3 • PA1,PB2, PC3 • PA1,PA2,PB3,PC3
	Operations employee	• Employee satisfaction • Attitudes towards changes • Productivity • Skill development/ training	• PA1,PA2,PA3,PB1,PB2,PC1,PC2,PC3 • PA1,PA2,PA3,PB3,PC1,PC2,PC3 • PA1,PA2,PA3,PC3 • PA1,PA2,PA3,PC1,PC3
Customer	'What' customers get from the service – closely related to the technical quality	• Accuracy • Speed • Flexibility	• PA1,PA2,PA3,PB1,PB2,PC3 • PA1,PA2,PA3,PB1,PB2,PB3,PC1,PC2,PC3 • PA1,PA2,PC1,PC2
	'How' customers perceive service delivery performed – closely related to the functional quality	• Reliability • Responsiveness • Assurance • Empathy • tangibles	The key measures identified in this aspect resulted from the analysis of archives, general customer survey, random calling questions used at case companies. Overall, key measures were found relevant to SERVQUAL dimensions.
Cost	'Hard' savings (profit)	• Elimination of non-value added activities and rework e.g. FTE saving (full time equivalent) • Reduction of WIP/wastage (direct money saving) • Reduction of cycle time (resource consumption saving)	• PA1,PA2,PB2,PB3,PC3 • PA1,PA2,PA3,PB2, PB3,PC3 • PA1,PA2,PA3,PB1,PB2,PB3,PC1,PC2,PC3
	'Soft' savings (profit)	• Higher customer satisfaction (long term profitability) • Enhance service continuity (long term profitability) • Increase customer loyalty (long term profitability)	• PA1,PA2,PA3,PB1,PB2,PB3,PC1,PC2,PC3 • PA1,PA2,PA3,PB1,PB2,PC1,PC2 • PA1,PC1,PC2

4.6 CONCLUSION

In this chapter, the author started by presenting within-case analysis results from Section 4.3 to 4.5. This empirical evidence was employed to generalise the key findings throughout the cross-case analysis in Section 4.5, addressing the second research objective. Three main stages were empirically synthesised to explain how financial institutions conducted BPI projects for improving service quality to enhance customer satisfaction, consisting of: initiation, implementation and measurement (evaluation). To summarise, a conceptual diagram was drawn to depict the adoption approach investigated from case companies in Figure 4.7 below.

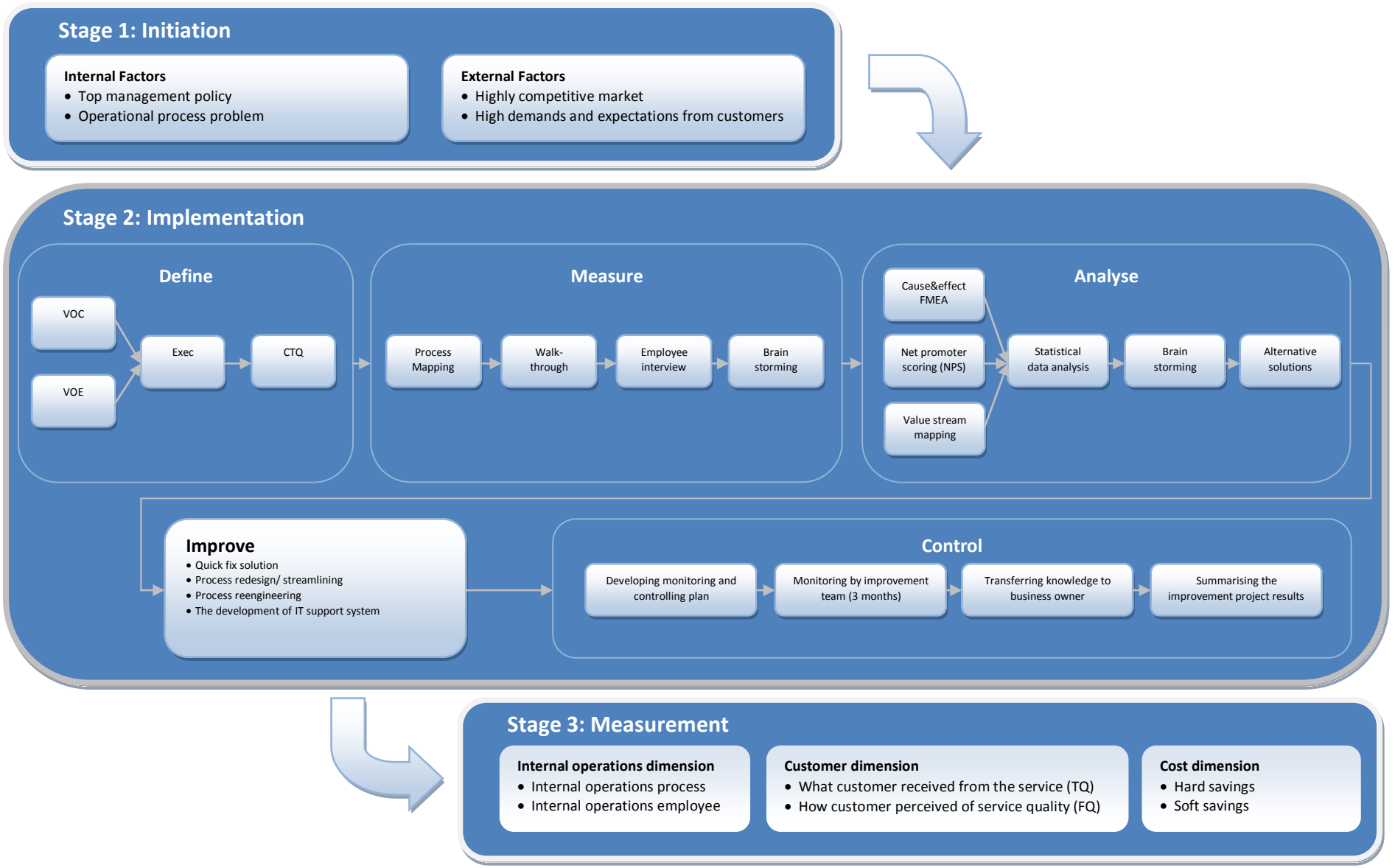


Figure 4.7: The conceptual diagram - BPI adoption approach

In addition, the key empirical findings observed in this phase suggested some critical ideas that would merit pursuing in the next phase. These were summarised as follows:

- The BPI project focus was on operations process efficiency and cost reduction (savings).
- The measurement of BPI project outcomes related to customer perspective was found ineffective, including:
    i. Less attention on soft aspects such as customers' perception resulting from the BPI project (e.g. responsiveness, reliability, assurance, etc.).
    ii. There was no specific measurement framework of BPI project in the financial service context.

Senior executives and improvement team leaders from all case studies agreed on the importance of developing a practical measurement framework for a BPI project. Hence, the author decided to focus on the measurement of BPI project outcomes, which helped to improve and broaden the foundation of BPI methodology in the particular context of financial services.

In essence, the initial conceptual framework was refined and developed by means of empirical evidence from three in-depth case studies. Two important elements of internal and cost dimensions were added to explain the entire outcomes of BPI project, described in Section 4.5.3. The first theory model was therefore synthesised to support the critical idea for developing the measurement framework of BPI initiative at the operational level, as shown in Figure 4.8.

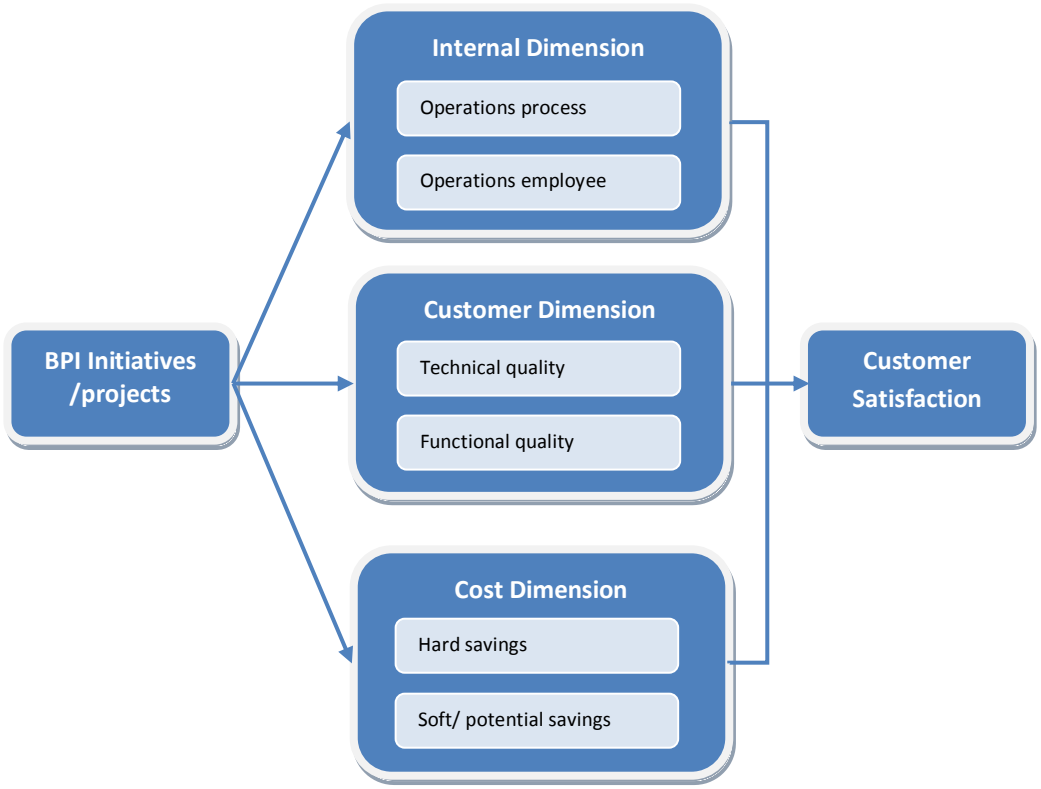


Figure 4.8: The first theory model

In the next phase, this model was used as a basis discussion with the experts in the area of quality management. This helped in refining and validating the proposed theory model before investigating the relationships in the final phase (Chapter 6). From this point onwards, the author will use the term 'BPI Evaluation' to represent the measurement of BPI project outcomes, to avoid the confusion with the measure-phase of the implementation stage.

CHAPTER 5
THEORY REFINEMENT AND VALIDATION
THE EXPERT INTERVIEWS

This chapter explains how the first theory model was refined and validated through the lens of key experts in the area of quality management. The objective was to discuss the first theory model developed in the exploratory empirical study phase, and aimed primarily to elicit some experts' comments and suggestions for development and improvement of the model. Three experts' critical comments were evaluated, to refine and validate the theory model for rationale and validity. Thus, the three main actions of this chapter included: 1) refinement of theory constructs, 2) validation of the logical consequence, and 3) conceptual refinement. The results will address the third research objective, and provide a concrete theory model for further verification of the relationships chain in Chapter 6.

In the previous chapter, the first theory model was proposed, grounded in the empirical findings from the case studies. The internal and cost dimensions were incorporated into the initial conceptual framework, aiming to portray the entire outcomes of BPI initiatives in the financial services context. As the first theory model was initially developed, the author considered it important to extend and broaden some critical ideas through discussions with key experts from both academia and practice. This would assist in developing a concrete foundation for the theory building purpose of this research.

This chapter is organised into five main sections. Section 5.1 provides an introduction to the expert interviews phase. Section 5.2 explains how the theory constructs are refined employing empirical evidence and experts' suggestions before justifying these, in the context of the literature. The logical consequence is validated, using evidence of organisational structure in Section 5.3. Section 5.4 describes the concept of 'customer value' to enrich the underlying concept of the theory model. The second theory model will be proposed in the final Section 5.5.

5.1 THE EXPERT INTERVIEWS

The expert interviews were carried out after proposing the first theory model in the exploratory empirical study phase. In total, ten key experts in the area of quality management were selected including: 4 academics, 3 professional consultants, and 3 senior executives in financial institutions. The full list of experts consulted is provided in Appendix 6. The experts were coded for referencing during the analysis process as shown in Table 5.1. The research objective and theory model were explained prior to the interview. The questions were sent out to interviewees in advance by email (See Appendix 4 – section 1). The interviews lasted around one to two hours per session. The digital-recorded information and field notes were transcribed and maintained as empirical evidence. The questions were incrementally developed after the first interview, in order to gain richer data. In addition, some follow-up questions were sent via email where further clarification was necessary.

Table 5.1: Summary of key experts' reference code

Ref. code	Category	Key expertise area of BPI methodologies				Others
		Six Sigma	Lean	TQM	BPR	
E1	Academic	✓	✓	✓		
E2	Consultant		✓	✓		Production management
E3	Academic			✓		Logistic
E4	Academic		✓	✓		Operations management
E5	Academic			✓		
E6	Consultant	✓	✓	✓	✓	
E7	Consultant	✓	✓	✓	✓	Simulation
E8	Executive		✓	✓		
E9	Executive			✓		
E10	Executive			✓	✓	ISO, CRM

On the basis of the qualitative data analysis, key themes were highlighted from the interview transcriptions. The author elicited some comments and suggestions from experts for developing concrete and well-defined theory constructs. At this stage, any replicated ideas were regarded as particularly significant in refining and amplifying the theory model, aimed for increasing both construct and internal validity (Eisenhardt, 1989; Miles and Huberman, 1994). To understand how the author will refine and validate the theory in the next three sections, experts' comments and suggestions are summarised in Table 5.2.

Table 5.2: Summary of experts' comments and suggestions

Required attentions	Experts' comments and suggestions	Required actions	Results
1) Different perspective of 'process' and 'customer' (section 5.2)	The customer-focused approach of BPI in service organisation calls for an understanding pertaining to different perspectives of 'process' and 'customer'.	It is vital to clarify the rational concept between these two perspectives for developing the theory model, aiming to understand how the outcomes of BPI initiative can enhance customer satisfaction.	Two perspectives of process and customer were considered important in understanding the outcomes of BPI towards both constructs of 'internal quality' and 'external quality'.
2)The definition of theory constructs (section 5.2)	Both 'internal quality' and 'external quality' constructs were developed based on empirical evidence. The underlying definitions were not clear at the early stage. It needed further refinement and development to provide concrete constructs.	Experts suggested providing a broader view of important quality aspects resulting from BPI adoption. This aimed to provide the underlying definition of the emerging constructs; internal and external quality.	The theory constructs were refined by iterating between empirical evidence and key literature in the area of quality management. The results suggested the concrete definition for proposing the valid theory model.
3)The logical consequence and relationship of theory constructs (section 5.3)	To propose the valid theory, it is important to understand the relationship among constructs. Since the 'internal' and 'external' quality dimensions were initially proposed, it is important to understand the logical consequence of these two dimensions.	Experts suggested validating the logical consequence between internal and external quality dimensions. They also pointed out the importance of investigating the relationship among theory constructs in the theory model employing empirical evidence from existing phenomena.	The logical consequence was validated by means of organisational structure of Thai financial institutions. The relationships of theory constructs will be verified in the next phase (Chapter 6).
4) The underlying concept (section 5.4)	It is vital to understand the mediator that explains the links between direct outcomes of BPI initiative and customer dimension.	Experts suggested the importance of incorporating the concept of customer value to assist understanding of the BPI outcomes towards customer satisfaction.	The customer value concept was incorporated to refine and enrich the underlying concept of the theory model. The external quality and cost dimensions were considered as the value of BPI initiative, which can be perceived by customers.

5.2 REFINEMENT OF THEORY CONSTRUCTS

This section summarises the ten key experts' comments and suggestions pertaining to the first theory model, aiming to refine and sharpen the theory constructs. To achieve this objective, it was considered important to iterate between the proposed constructs and the empirical evidence through the literature context, as suggested by Eisenhardt (1989). This would enrich both the theoretical and practical implications of the theory constructs. Hence, two important questions were set for discussion with the experts at this stage, including:

(1) What are the important constructs that should be incorporated in the theory model to help in developing an evaluation framework for BPI initiatives?
(2) What are the appropriate definitions of the theory constructs towards theoretical and practical implications?

As a result, Section 5.2.1 summarises the experts' comments relating to the difference between process and customer perspectives. Section 5.2.2 describes the emergence of a conceptual division between internal and external quality dimensions, as an important construct that should be incorporated into the theory model. The definitions of theory constructs will be refined using empirical evidence and experts' suggestions in the context of literature in Section 5.2.3.

5.2.1 The difference between 'process' and 'customer' perspectives

The difference between 'process' and 'customer' perspectives was critical to understanding the outcomes of a BPI initiative in the service sector. The experts described how BPI methodologies have been adopted in financial services, for improving business processes in order to enhance customer satisfaction (E1, E2, E6, E7, E10). Customer-focus became a main plank of BPI adoption in services. The partner of a consulting company explained that:

> "The customer-focused approach of BPI has become imperative for improving the business process, particularly in the service organisation in Thailand. This approach considered the customer as the centre of BPI initiative, which is slightly different from the BPI approach adopted in manufacturing sector (E6)"

BPI adoption in the financial services sector aimed not only at improving the operational processes, but also at enhancing customer satisfaction (E1, E7, E10). At this point, the difference between process and customer perspectives was noted in relation to the evaluation of BPI outcomes in financial services. Whilst the process perspective focused on key measures related to internal operations, customer perspective was concerned with both; 'what' customers obtained from the service, and 'how' a service was performed. To understand this difference, empirical evidence illustrated three key measures of process that can be viewed differently from a customer perspective, as given in Table 5.3.

Table 5.3: The examples of key measurement criteria from 'process' and 'customer' perspectives

Dimension	Time	Cost	Quality
Process perspective	Processing time	Cost	Defect in the process
Customer perspective	Speed/responsiveness	Price	Accuracy/ perceived quality

In practice, customers usually cannot directly perceive that better quality of service has resulted from any BPI initiatives (E1, E2, E3, E4, E8). This comment aligned with the empirical evidence in Chapter 4 that BPI outcomes were measured explicitly in terms of operations processes (e.g. cycle time reduction, non-value added elimination), whilst customer dimension seemed to be under-measured in practice. This finding reflects the study of Jones (2008) that it was difficult to trace the outcomes of BPI initiatives towards the bottom line, implying to the customer dimension. Particularly in the financial services, experts suggested that it was vital to assess the BPI outcomes from a customer perspective, as they mentioned:

> "Without the evaluation of BPI outcomes in term of customer perspective, organisation cannot justify that the improved process is better or not. The customer perspective measures will be used not only to confirm the success of BPI initiatives, but also to help in sustaining the improvement direction within the organisation (E7)"

> "It is important to evaluate the BPI by investigating through the end customers, rather than evaluating from the internal operations process perspective only (E8)"

In summary, key experts confirmed the importance of evaluating BPI outcomes from the perspectives of both process and customer. This is in line with Harris and Harrington (2000) who highlight that companies need to understand both operations process performance and quality of service as perceived by customers, which are critical to the customer satisfaction level. An understanding of the difference between these two perspectives therefore provided a constructive foundation of the theory model, which also helped in developing the BPI evaluation framework in a financial services context. Thus, the definitions of theory constructs will be discussed to broaden some critical ideas for refinement in the next section.

5.2.2 The emergence of the 'internal quality' and 'external quality' dimensions

The author considered that the difference between process and customer perspectives helped to understand the underlying implications of internal operations and customer dimensions, as proposed in the first theory model. To develop the credibility and validity of the theory, all the experts suggested refining and sharpening both the definitions and terms used, to establish more concrete theory constructs. This accords with the theory building processes proposed by Eisenhardt (1989) and Miles and Huberman (1994). Having reviewed the expert interviews, various terms were elicited and suggested to represent the internal operations and customer dimensions. The author observed that even terminologies were used differently, while referring to the same implication. Given examples, one academic researcher suggested that:

> "From the proposed model, the internal operations dimension is closely related to the *efficiency* of the operational process which can be measured objectively, whereas the customer dimension is considered as the subjective measure of *effectiveness* of a BPI initiative (E1)"

Another academic researcher also recommended that:

> "In the service sector, the outcomes of BPI initiative can be perceived by customers as *explicit* quality, e.g. speed and accuracy of service, and *implicit* quality such as responsiveness and reliability during service delivery process. It is imperative to understand the difference between these two perspectives (E3)"

A partner in a consulting firm commented that:

> "From my experience, the outcomes of BPI initiative in the service sector can be measured towards both *tangible* and *intangible* dimensions, which I have found these closely related to internal operations and customer dimensions as proposed in the model (E6)"

During the analysis, the author found an emergent insight in separating the outcomes of BPI initiative pertaining to different quality dimensions. Two terms: 'internal quality' and 'external quality'; emerged as recommended from the expert discussions, aiming to explain BPI outcomes from the viewpoint of a financial service provider. The definition and description were synthesised, employing key experts' suggestions as follows.

'The internal quality dimension represents an explicit measure of BPI initiative outcomes pertaining to the objective criteria. The key measures of the internal quality dimension are used to validate the tangible outcomes of BPI, closely related to 'what' customers perceives of the quality of service, e.g. speed, accuracy, etc. This can be directly measured internally through processing time, non-value added elimination, work in process and defect reduction, staff's performance and productivity improvement etc.'

'The external quality dimension represents an implicit measure of BPI initiative outcomes, which is used to understand 'how' customer perceives the quality of service, pertaining to the subjective criteria. The key measures of external quality dimension are used to justify the intangible outcomes of BPI. This can be indirectly assessed externally by customers in areas such as responsiveness, accuracy, and reliability of service, etc.'

In summary, these two terms were initially proposed; key experts suggested the importance of further refinement and development by iteratively analysing the empirical evidence in the context of the scholarly literature to provide a concrete definition. This will be explained in the next section.

5.2.3 Definition of the 'internal quality' and 'external quality' dimensions

This section refines and sharpens the definitions of internal and external quality dimensions in the context of quality management literature. The author starts by taking

a broader view of 'quality' definitions, before justifying the rationale in proposing the internal and external quality in the theory model. During the refinement process, empirical evidence and experts' suggestions were analysed iteratively with the literature to enrich both theoretical and practical implications.

5.2.3.1 The theoretical foundation of internal and external quality dimensions

Having reviewed extant literature, 'quality' has been broadly defined pertaining to the conformance specifications (Levitt, 1972), fitness of use (Juran and Bingham, 1974; Anderson *et al.*, 1994a), conformance to requirements (Crosby, 1979 cited in Reeves and Bednar, 1994), and meeting or exceeding customers' expectations (Grönroos, 1984; Parasuraman *et al.*, 1985). In the early stages, quality definitions were developed in a manufacturing context. The proliferation of the service sector leads to the more widely defined concept of quality, as the extent to which product and service meet or exceed customers' expectations, referring to service quality (Reeves and Bednar, 1994).

The conceptualisation of service quality has gradually dominated the definition of quality in service organisation. A customer-based definition was found increasingly important in understanding quality in the service context. Reeves and Bednar (1994) pointed out that quality measures based solely on production were no longer so useful, whilst incorporating measures in response to customers' requirements has become a vital part of quality definition. This has helped organisation to recognise the value of service delivered to the end customers.

The extant definition of quality and service quality are often consistent with a view of quality as having two distinct dimensions, internal and external. For example, Juran's (1974) definition of quality as 'fitness for use', does not preclude views of quality as pertaining to both the internal and external aspects, referring to process fitness measures and measures of customers' perception of fitness, respectively. In the service profit chain, according to Heskett *et al.*, 1994, quality was cascaded as two dimensions related to internal and external quality, which are both important drivers for delivery of high quality service to satisfy the end customers, thereby improving long term profitability.

Furthermore, quality can be defined in term of measurement implications. To manage service operations, it is important to understand key measures from both production of the service, and outcomes to be delivered to customers (Parasuraman, 2002; Bowen and Ford, 2002). These could be referred to as the efficiency and effectiveness of service operations. This suggestion is in line with Reeves and Bednar (1994) who defined quality as a value offered to customers, about which organisations must be concerned with both internal efficiency, and external effectiveness, as well as cost implication resulting from internal conformance, in order to deliver high quality products and services to customers.

It can also be seen that the concept of internal and external quality is aligned with the orientation and organisation focus concepts of Detert and Schroeder (2000) who suggested a balanced focus of internal (people and process), and external (customers and competitors) constituents. Anderson *et al.* (1997) emphasise that an organisation needs to understand inter-relationships between operations productivity and customer satisfaction, which reflects the importance of understanding the causal linkage between internal and external quality in the theory model. The literature related to the theoretical foundation of internal and external quality dimensions is summarised in Appendix 8.

Key literature also suggests that a BPI initiative can help improve both operations process efficiency and quality of service, thereby enhancing customer satisfaction (Anderson *et al.*, 1994a; Roth and Jackson III, 1995; Bhatt and Troutt, 2005; Yasin and Alavi, 2007). This reflects the importance of understanding the outcomes of BPI in both internal and external quality dimensions. Therefore, well-formed rational definitions were required for further development of the theory model, as described in the next two sections.

5.2.3.2 The underlying definition of the internal quality dimension

The internal quality dimension focuses on the key measures of a BPI initiative pertaining to the operational process performance, referring to efficiency. Empirical evidence suggested that the outcomes of BPI initiatives were measured explicitly, such as cycle time reduction and waste elimination, etc. The experts also supported the view that BPI adoption in financial services usually concentrated on improving the internal

process, particularly in back-office operations (E6, E7, E10). These findings were in line with literature that suggested positive relationships of business/quality improvement initiatives towards various facets of operational efficiency (Flynn *et al.*, 1994; Yasin and Alavi, 2007). This could imply that evaluation of BPI initiative was typically based on internal measures, thereby impacting on the cost dimension (Jammernegg and Reiner, 1997).

Furthermore, empirical evidence suggested another important aspect related to operations employees. The experts pointed out that BPI adoption in services also focused on improvements of the operations employees aspects, aiming to enhance their satisfaction, skill, productivity, and attitudes; this in turn positively impacts on both operational process efficiency and the service delivery process as perceived by customers (E2, E4, E6, E7, E10). This was supported by scholarly literature that suggested that internal measures should be considered for both operations processes and employees (Howcroft, 1993; Anderson *et al.*, 1994b; Zairi, 2000).

Besides enhancing internal operations process efficiency, the employee's role has been emphasised in improving the quality of services as perceived by customers, referring to the external quality dimension. Heskett *et al.* (1994) suggest that the employee is an important driver for delivering high quality of services to enhance customer satisfaction. Voss *et al.* (2005) emphasise that satisfied employees tend to work more efficiently to deliver high service quality resulting in a greater customer satisfaction. Boaden and Dale (1993), and Ghobadian *et al.* (1993) highlight that the operations employee is a vital factor that drives the success of a BPI initiative towards improvement of both technical and functional quality aspects as proposed in the theory model.

To summarise, both the operations process and employee were considered as two imperative aspects of internal quality dimension. The rationale for measuring outcomes of BPI initiatives through these aspects has been articulated from the empirical findings, experts' suggestions and key related literature. The author, again, asserted that the incorporating of operations employee aspect would comprehend an underlying foundation of internal quality dimension, particularly in the financial services context.

5.2.3.3 The underlying definition of the external quality dimension

The external quality dimension focused on measures of BPI initiative outcomes, related to customers' perception. At this stage, the term 'customer dimension' in the first theory model, was redefined and the term 'external quality' was suggested, as previously discussed in Section 5.2.2. The external quality dimension was necessary to understand the outcomes of BPI initiative from customer perspective, which was a key objective of this research.

Chapter 2 identified two main service quality conceptualisations: SERVQUAL and Grönroos' service quality model. SERVQUAL has been criticised because of its main focus on the service delivery process, lacking consideration of service outcomes (Grönroos, 1990; Richard and Allaway, 1993; Kang, 2006). The author, therefore, decided to incorporate the view of Grönroos' service quality model, aiming to understand the improved quality of service resulting from a BPI initiative, as perceived by customers. This is in line with the external focus of quality definition proposed by Reeves and Bednar (1994).

Theoretically, the experts agreed with the importance of understanding the outcomes of a BPI initiative through both technical and functional quality aspects as perceived by customers (E1, E2, E3, E4, E6, E7, E8, E10). Empirical evidence from case companies suggested that services from financial institutions can be viewed as a 'financial product' and 'financial service', which are simultaneously delivered to customers and in which they perceive service quality (EC2, EC3, EC5, EA2, EA3). The example of the housing loan illustrated that customers expected to receive the loan approval quickly, accompanied by accurate documentation, whilst also considering quality of service delivery (e.g. responsiveness, empathy, etc.), as important criteria of company selection. This suggests that the evaluation of a BPI initiative needs to be conceived in terms of measuring the technical and functional quality as perceived by the customer, as suggested in the studies of Kang (2006) and Harvey (1998). Hence, the author decided to clarify the underlying definition of these two aspects through the context of literature as follows.

Originally, technical and functional quality terms were conceptualised to provide the service equivalent of product features proposed in the Grönroos's service quality model. Grönroos (1984) defines the technical quality as the outcome of services related to 'what' customers received from the service interaction, whilst the functional quality is related to 'how' customers obtained the service outcome transferred to them functionally. Similarly, Lehtinen and Lehtinen (1991) suggested a two-dimensional concept of output and process quality, to understand how customer perceived the quality of delivered services. Whereas the output quality is the customers' evaluation related to the results of the service production process, the process quality is viewed as customers' evaluation of services based on subjective judgement during service interaction. Howcroft (1991) suggests that the pursuit of high quality of service in retail banking relies on both service outcome and process. These two aspects were found important to customers' evaluation of the quality of service. It is a significant challenge for a service provider to deliver customers with technical imperative, while managing customer perception during the delivery of the services (Harvey, 1998).

At this point, there appeared to be a debate about the placing of the 'reliability' aspect in either the technical or functional quality dimensions, Maddern *et al.* (2007) suggest that of the SERVQUAL dimensions, "reliability and tangibles do not seem to fully align with the original concept of functional quality as outlined by Grönroos". Considering his aim in evaluating outcomes of BPI initiatives, the author, however, argues that it is more useful to position reliability in the functional dimension, which is primarily connected with how the customer perceives the quality of service during the delivery process. There are aspects of reliability in financial services which are connected with, for example, communications later in the customer relationship, but the initial delivery period is most important, because it is here that the great majority of the customer interaction (e.g. application for a loan and associated response) normally takes place. Reliability should, therefore, be considered as a measure pertaining to the customer's perception of service dependability during the delivery process, rather than a measure of the financial product (referring to technical quality). This classification is significant for the practitioner in managing BPI projects for improving service quality.

In order to evaluate the outcomes of BPI initiative, then, the literature clearly justifies the incorporation of technical and functional quality aspects into the external quality

dimension. The underlying notion of external quality was also consistent with scholarly literature that suggests the relative importance of outcome and process quality attributes for evaluating the quality of service to customers (Powpaka, 1996; Harris and Harrington, 2000; Dabholkar and Overby, 2005). At this point, the external quality proposed in the theory model should be considered as an antecedent of customer satisfaction constructs, in line with key service quality literature (Anderson and Sullivan, 1993; Dabholkar *et al.*, 2000).

To summarise, although the terms and definitions used for technical and functional quality aspects have not been consistent throughout the service quality literature, they nonetheless have similar implications. The author adopted the view of Grönroos' service quality model, which appeared best suited to understand the outcomes of BPI initiatives in financial institutions. However, the author will use the terms 'technical features' and 'functional features', instead of technical and functional quality, to avoid confusion with service quality principle.

5.3 VALIDATION OF THE LOGICAL CONSEQUENCE

After refining the underlying definitions of key theory constructs, the experts suggested verifying the logical consequence of the proposed constructs by comparing and contrasting the empirical evidence to the extant literature. This process followed the theory building approach of Eisenhardt (1989), and would provide a good basis for further investigation of relationships chains in the next phase. Hence, this section summarises the experts' suggestion before explaining the organisational structure of a financial institution, aiming to justify the logical consequence of the theory model.

5.3.1 Logical consequence

This section addresses the logical consequence between internal and external quality dimension. Two important suggestions were elicited from the experts. Firstly, internal quality should be considered as the key driver of the external quality dimension. This point resulted from the experts' belief that BPI typically focused on improving the internal operations process. The academic researcher in Six Sigma area said:

> "Since the main objective of BPI is to improve the internal operations process, the internal quality dimension is explicitly considered as the main driver of external quality dimension. Consequently, the outcomes of the internal process improvement would help improve the external quality as perceived by customer (E1)"

Furthermore, the partner in a consulting firm maintained that:

> "Most service organisation typically adopted the BPI initiative for improving the performance and efficiency of their business processes, particularly in the internal process or back operations. This mainly aimed at improving the quality of financial products and services for enhancing customer satisfaction (E6)"

At this point, the experts suggested that the BPI outcomes directly impact on both internal operations processes and employees, thereby improving the quality of products and services as perceived by customers (E1, E3, E4, E6, E7, E10). This could imply that internal quality improvement could be considered as a prerequisite of external quality improvement.

Alternatively, external quality might be viewed as a mediator between process perspectives and the customer (E1, E2, E8). Experts suggested that the external quality dimension could help to explain how customers perceive the quality of service, related to subjective measures. These could be converted to objective measures for evaluating the outcomes of a BPI initiative related to the operations process, and hence connected to the internal quality dimension. A consultant from the Thailand productivity institution commented that:

> "As the proposed model, I view the external quality dimension as the customer requirement that could be translated to the objective measures of the internal operations process. This would provide practitioners an understanding of the outcomes of BPI initiative from both customer and process perspective, which could be further developed as the evaluation system of BPI initiative (E2)"

To summarise, the internal quality and external quality dimensions were found to be closely linked from the experts' viewpoint. The author considered the first alternative (i.e. as a prerequisite) was rational to understand the outcomes of a BPI initiative towards end-to-end business processes. However, the relationship and logical consequence of these two dimensions still needed further refinement and validation

using the empirical evidence. Thus, the logical consequence between internal and external quality dimensions will be discussed, in relation to the organisational structure of the financial institutions, which will be briefly outlined below.

5.3.2 The organisational structure of the case study institutions

This section describes the organisational structure of four main financial services: housing loan, credit cards, international trade finance, and branch channel. All financial service departments studied, shared the same basic structure by separating back office from front office operations. This was consistent with the service factory concept (Chase and Erickson, 1988), and service delivery concepts (Johnston and Clark, 2005) that suggest an appropriate structure of back and front operations processes in a service organisation. The core idea is to centralise routine operations in the back office centre, and facilitate the front operations to focus on sales and service functions (EA2, EA3, EC4, EC5). One underlying concept was to manage the routine processes as an efficient production line, as the first vice president of consumer credit operations department mentioned:

> "Since there are a huge number of applications each day at my department, it is important to apply the manufacturing factory concepts to manage day-to-day operations....Our department is considered as the production line that produces the financial product to the front operations (EC4)"

Similarly, the first vice president of the international trade department explained:

> "The back operations processes become the same as manufacturing factory, aiming to improve the speed, and quality for processing the transaction as customers' request....front office tends to pay more attention to sales and service function, rather that operational tasks (EC5)"

Hence, back operations in the financial services were found operating similarly to manufacturing production, as suggested by Hoerl (2004). The input can be either applications or customers' request, transferred from front operations. This will be processed by the back office, before providing the output to customers through the front office channel. This decoupling strategy is now widely adopted as the practice of removing low-customer contact components of front-office work, standardising them,

and relocating them into the back office with the aim of increasing efficiency (Metters and Vargas, 2000).

The author observed that routine operations were centralised into the similar operations units or departments in each case. Senior executives explained that the centralised operations aimed not only to manage and improve the efficiency of operations processes, but also to reduce the operating cost pertaining to number of employees, and shared facilities etc., which is consistent with the findings of Zomerdijk and Vries (2007) relating to the front-back office structure in financial institutions. Furthermore, the front operations can work more effectively by focusing on delivery to customers with higher service quality (EA2, EA3). The functional split of the four financial services is shown in Table 5.4.

Table 5.4: The functional split of the four financial services departments

Financial service department	Back operations/ office	Front operations/ office
Housing loan	Consumer credit operation: loan origination/ approval process	Product management and marketing: Sale channel includes both developers and branches
Credit cards	Consumer credit operation: credit card approval process	Product management and marketing: Sale channel includes both direct sale advisor and branches
International trade finance	International trade hub operations	International spoke (branch) operations
Branch channel	Central operations centre	Branch/ in-store branch

Interviewees pointed out that the various BPI initiatives, e.g. Six Sigma, Lean, BPR, TQM, have been adopted for improving back operations processes. BPI helped in improving the process efficiency, productivity and satisfaction of employees, and reducing the cost of operations, in turn reducing price to customers (EC4, EC5, EA2, EA3). The BPI outcomes in back operations were found to be closely related to both operations process and employee aspects of the internal quality dimension. Thus the internal quality dimension was considered particularly relevant to the back operations.

On the other hand, the front operations were primarily concerned with the service delivery process, which is a direct-contact channel with customers. Senior executives

and branch managers described the role of front operations as delivering the best quality of financial product and service to satisfy their customers. As previously discussed in Section 4.5.3, two important criteria for delivering the service could be referred to as the technical and functional features aspects of the external quality dimension. Hence, the underlying definition of external quality was closely related to the front operations.

Hence, the back operations and front operations structure were closely related to internal and external quality respectively. Since the objective of the proposed theory model was to understand the outcomes of the BPI initiative towards customer satisfaction, taking a process view, the internal quality should be considered as the prerequisite of the external quality dimension. To summarise graphically, the quality dimensions related to the organisational structure is shown in Table 5.5.

Table 5.5: The financial organisational structure in relation to the quality dimensions

Organisational structure	Quality dimension	Key critical aspects	Key existing measures
Back Operations	Internal quality	Internal operations process	• Processing time • Work in process (WIP) • Number of reworks and failures • Non-value added
		Internal operations employee/ staff	• Staff productivity • Staff satisfaction • Development and training • Staff perception and attitude
Front Operations	External quality	Technical features	• Speed of service • Accuracy of service • Flexibility of service
		Functional features	• Contact-staff interaction • Responsiveness, reliability • Empathy and courteousness • Assurance • Tangibles

5.4 CONCEPTUAL REFINEMENT

This section broadens the underlying concept of the theory model as suggested by the experts. The concept of 'customer value' emerged as central in refining the underlying concept of the theory model, which was intended to link BPI outcomes to customer satisfaction. At this stage, incorporating of the customer value concept resulted from iterative analysis of both the empirical evidence and the literature. The importance of

the customer value concept will be clarified in Section 5.4.1. Section 5.4.2 provides a review of customer value, concerning specifically the implications for refining the theory model. The rationale for incorporating the customer value concept into the theory model will be described in Section 5.4.3.

5.4.1 The importance of the customer value concept

Empirical evidence introduced in Chapter 4 suggested that customers may not perceive that a better quality of service has resulted from any specific BPI initiative. Several experts argued that the difficulties of linking the outcomes of BPI initiatives to the external quality dimension were significant (E1, E2, E3, E4, E6, E7, E8, E10). Nevertheless, they maintained that it is important to attempt to understand and measure BPI outcomes from the 'bottom line' of performance, meaning the customers' perspective, in line with Woodruff (1997). This will allow the linking of customer perceptions to operational process implications, which is useful in practice. Hence the author incorporated an underlying concept for developing an evaluation framework of a BPI initiative in the financial service context, as recommended by both academics and practitioners.

A customer-focused approach becomes increasingly important in response to higher demands of customers in a highly competitive market. Customer satisfaction results when the outcomes of BPI from customers' perspective meet or exceed the customers' expectation. Ironically, customer satisfaction has been criticised pertaining to the weak implication to response the customers' voice effectively, in particular of the causal linkage to the internal operations process performance (Woodruff, 1997). This is in line with Jones and Sasser (1995), who argue that sometimes customer satisfaction data do not correlate highly with organisational performance. At this point, the empirical evidence indicated that the customer satisfaction metrics used at the case companies were not applicable to a specific BPI project, because they generally focused on the overall satisfaction with services rather than attempting to provide detailed linkage to internal processes (EA2, EA3, EC2, EC3, EC4, EC5).

This indicates the need for a concept that can help in understanding the outcomes of BPI, aiming to bridge this gap in practice. Customer satisfaction can be enhanced and

influenced through 'value', which, as perceived by customers, is critical to evaluating their satisfaction level (Heskett *et al.*, 1994; Anderson *et al.*, 1994a; Reeves and Bednar, 1994; Woodruff, 1997). Customers will be satisfied by receiving a higher quality of service, while acquiring it at the lowest price. By adopting the customer value concept to enrich the foundation of the theory model, the author aimed to understand how the outcomes of a BPI initiative could enhance the level of customer satisfaction effectively.

5.4.2 Customer value concept

The customer value concept has become prominent in driving organisations to consider how to create and deliver superior value to customers (Woodruff, 1997). There has been increasing interest in this concept in both academia and practice (Payne and Holt, 2001; Eggert and Ulaga, 2002). Holbrook (1994) suggests that 'customer value is the fundamental basis for all marketing activity'. It has been widely studied in marketing, and is important when formulating business strategy to grow profits and ensure long term survival (Gale, 1994; Woodruff and Gardial, 1996; Flint *et al.*, 2002). In the early stage of the concepts development, Richins (1994) points out that value was primarily examined in the exchange context, concerning the consumer's perceptions of value. Customer value is hence most frequently conceptualised pertaining to the relationship between quality received and price paid (e.g. Monroe, 1990; Bolton and Drew, 1991). More recently, research on customer value has been extended to the context of relationship marketing, particularly in relation to the customer-supplier relationship (e.g. Flint *et al.*, 1997; Eggert and Ulaga, 2002; Flint *et al.*, 2002; Ulaga and Eggert, 2006; etc.). Despite a growing body of research on the customer value concept, there still appear to be some issues associated with it, presented in the extant literature, such as: an elusive and unclear definition of customer value (Woodruff, 1997); difficulties in measuring customer perceived value (Holbrook, 1994; Zeithaml, 1988); and an unclear relationships between customer perceived value and customer satisfaction (Eggert and Ulaga, 2002). In the remaining part of this section, the author primarily discusses relevant aspects of the customer value concept, particularly those that may have implications for developing the theory model.

There are a considerable number of researchers that suggested ways in which to define value from the customer's points of view. In 1988, Zeithaml empirically defined customer-perceived value as 'the consumer's overall assessment of the utility of a product based on perceptions of what is received and what is given' (Zeithaml 1988, p.14). Monroe (1990) also defined customer-perceived value as the ratio between perceived benefits and perceived sacrifice. Having considered definitions derived from prior empirical research, Woodruff (1997) proposed the definition of customer value as 'the customer's perceived preference for an evaluation of those 'products' or services' attributes, performance attributes, and consequences arising from the use of products or services that achieve the customer's goal and purposes in the use situation' (Woodruff 1997, p.142). He also suggested that value should be something perceived by customers rather than objectively determined by a seller. In essence, most authors agree that customer-perceived value involves trading off between benefits and sacrifice perceived by customers within use situations (Zeithaml, 1988; Monroe, 1990; Woodruff, 1997; Flint *et al.*, 2002). The perceived benefits are some combination of physical attributes, service attributes and technical support available in relation to the particular use situation, as well as other indicators of perceived quality (Monroe, 1990; Ravald and Grönroos, 1996). The perceived sacrifice involves recognition of all costs a buyer incurs when making a purchase: purchase price, acquisition costs, transportation, etc. (Ravald and Grönroos, 1996). Overall, an understanding of customer-perceived value is important because it links desired product or service attributes and performances to desired consequences within the usage context, as well as providing a linkages to the customers' goals and purposes, referring to customer satisfaction (Payne and Holt, 2001).

Rust and Oliver (1994) stated that 'value is formed from perceived quality in combination with price'. In order to evaluate the value of the service, Dumond (2000), and Setijono and Dahlgaard (2007) point out that it involves the trade-off between what customers receive (e.g. quality, benefit, worth), and what they give for acquiring the use of products or service (e.g. price, sacrifice), reflecting on the idea of 'what they got and what they pay' (Iacobucci *et al.*,1994 cited in Ravald and Grönroos, 1996). It then turns to the crucial question of how a company can deliver the highest value to satisfy its customers. As mentioned in Chapter 2, there is a considerable amount of research that suggests the importance of service quality dimensions as a prerequisite for satisfying

customers (e.g. Churchill and Suprenant, 1982; Cronin and Taylor, 1992; Anderson and Sullivan, 1993; Rust and Oliver, 1994). This type of research has typically not included perceived value as a determinant of customer satisfaction, which has been regarded as a shortcoming of this approach (Ravald and Grönroos, 1996; Heskett *et al.*, 1997; McDougall and Levesque, 2000). Zeithaml (1988) argued that value differs from quality in two ways: 1) value is more individualistic and personal than quality, and is therefore a higher level concept than quality; and 2) value (unlike quality) involves a trade-off of 'give and get' components.

The concept of customer value suggests a strong relationship to customer satisfaction; and both concepts describe the evaluative judgements about products and services (Woodruff, 1997). Dumond (2000) points out that an understanding of the value concept would provide an important means to respond to customer satisfaction measures. McDougall and Levesque (2000) consider that service quality and perceived value are both important drivers of customer satisfaction, and together provide a complete picture of customer satisfaction. Eggert and Ulaga (2002) suggest that customer perceived value and customer satisfaction should be conceptualised and measured as two distinct yet complementary constructs. Setijono and Dahlgaard (2008) signify that a company which attempted to understand the improvement outcomes through a value-context would potentially gain a higher competitive advantage than by simply focusing on improving the operations processes. Hence, it is of interest to incorporate the customer value concept for developing the theory model, to understand how BPI initiative outcomes could enhance customer satisfaction. In the context of this research, the customer value concept helps to provide more comprehensive understanding of the way in which customers perceive the outcomes of BPI initiative, concerning the trade-off between all relevant benefits (i.e. technical features, functional features) and sacrifice (i.e. cost/ price); which are likely to impact on their evaluative judgement of satisfaction.

5.4.3 Incorporating the customer value concept into the theory model

The customer value concept was considered as a better foundation for the theory model by integrating both external quality and price into the focal objective in order to enhance customer satisfaction, as suggested by Boaden and Dale (1993), and Setijono

and Dahlgaard (2007). Customer value can be enhanced by: 1) increasing the quality/ benefits; and 2) reducing the sacrifice or price (Monroe, 1990; Ravald and Grönroos, 1996). The case study results indicated that BPI explicitly helps in improving the internal quality dimension, which in turn impacts on both external quality and cost dimensions; clearly indicating the potential of BPI for creating customer value.

To deliver better value to customers, a company should concentrate on internal efficiency, external effectiveness, and the cost implications (Reeves and Bednar, 1994; Ravald and Grönroos, 1996). These three aspects were incorporated into the theory model, to give a concrete foundation and suggest logical consequences of BPI in improving customer satisfaction. The value concept provides a necessary extension of the theory model, in linking customers' evaluation of the received service with the internal operations process dimension. Rather than placing the emphasis on measuring the outcomes of BPI towards customer satisfaction, incorporating the customer value concept would provide a more comprehensive understanding of why customers made this evaluation, and how they perceive the quality of service delivered. Managers can, therefore, potentially identify key processes to be improved with an aim of delivering the desired value to customers more effectively.

Hence, incorporating customer value improved the theory model, by broadening the evaluation of BPI outcomes, considering customer value as a key mediator for enhancing customer satisfaction. In practice, this provides a good theory basis for developing a BPI evaluation framework to provide the operational performance feedback that is necessary to sustain and develop improvement efforts within the organisation.

5.5 CONCLUSION

In this chapter, three important actions, suggested by the experts, were undertaken for refining and validating the theory model. First, key theory constructs have been refined through experts' comments and suggestions by iterating between observed evidence and the literature. Second, the logical consequence of the theory constructs was validated and justified by consideration of organisational structure. Internal quality was positioned as a prerequisite of external quality and cost dimensions in the theory model.

Third, the author proposed 'customer value' as the key mediator between the BPI initiative and customer satisfaction, aiming to enhance the underlying concept of the model. As discussed in Section 5.4, this concept was incorporated into the model to integrate both external quality and cost dimensions into the focal objective to understand the customers' perception of the received service, which is an important evaluative judgement response to their satisfaction level.

'Customer value' is therefore viewed as a *'mediator'* of a BPI initiative towards customer satisfaction. Firstly, it could be considered as the *'impact-mediator'* that explains how the BPI initiative outcomes impact on the customer's perceived value of service delivered. This helps practitioners to evaluate the outcomes of the BPI initiative from the customer perspective and provides a good basis for developing a practical BPI evaluation framework which will be addressed in the next chapter. Secondly, customer value could be viewed as a *'feedback-mediator'*. This role helps in linking customer satisfaction pertaining to the service delivered, back into the internal quality dimension. This can provide information identifying critical areas for improvement, responding to customers' needs and expectations and hence sustaining the improvement efforts and BPI initiative in financial institutions, which were observed to be declining in importance after initial adoption.

To summarise, the overall findings were articulated and synthesised for proposing the second theory model, as shown in Figure 5.1 below. In the next phase, this model will be used for investigating the relationships indicated in the diagram to propose a final theory model.

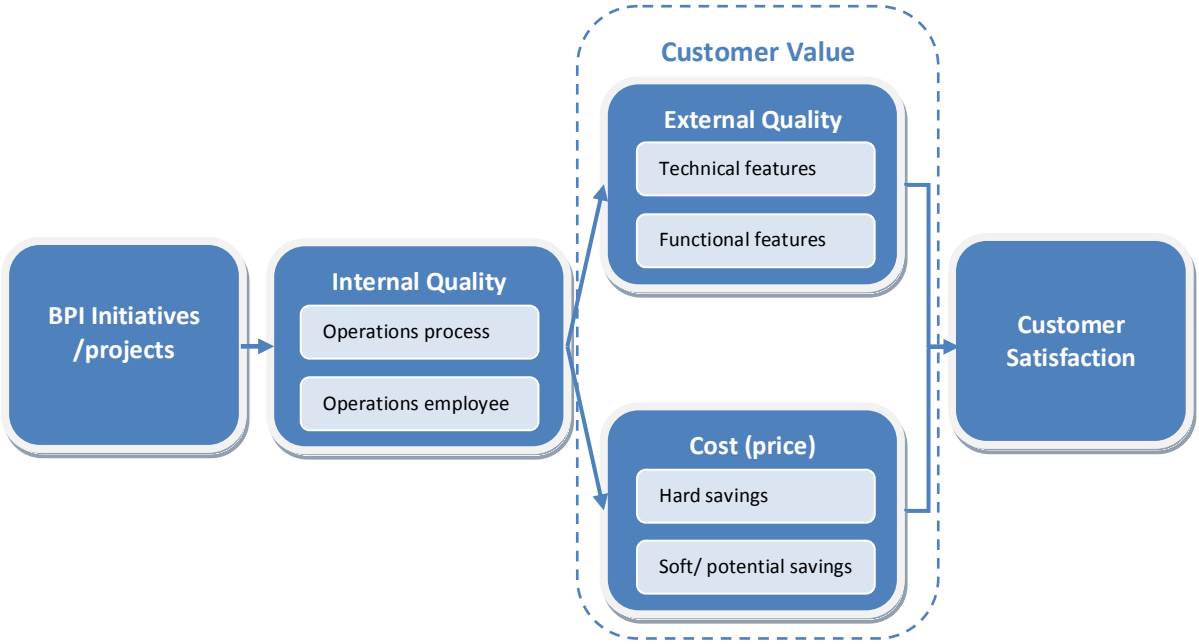


Figure 5.1: The second theory model

CHAPTER 6
DEVELOPMENT OF THEORY MODEL

This chapter describes how the final theory model was developed, in particular the underlying relationships in the model, which were developed through revisiting the case studies. To focus this final phase, four important areas of financial services were selected: housing loans, credit cards, trade finance, and the branch channel. The model was gradually developed through the three main phases of this research: the exploratory empirical study (Chapter 4), the expert interviews (Chapter 5), and finally this, the relationships verification. Findings to be presented here will identify the empirically supported relationships between theory constructs, which address the fourth research objective. Building on this theory development, the author also proposes in this chapter a BPI project evaluation framework for practitioners, based on the final theory model.

This chapter is organised in four main sections. In Section 6.1, four main proposed relationships are identified. The empirical evidence is then analysed employing both qualitative and quantitative data to verify each relationship. Section 6.2 summarises how the final theory model was developed by mean of empirical findings from three main phases of this research. In Section 6.3, the BPI evaluation framework is proposed, considering the reflection of the model on performance measurement frameworks, and the importance to practitioners, before describing step-by-step guidelines for assessing a BPI project. The conclusion is provided in Section 6.4.

6.1 THE RELATIONSHIPS VERIFICATION

This section verifies the emergent relationships, aiming to understand ‘why’ and ‘how’ relationships exist which are important for enhancing the internal validity of the theory model (Eisenhardt, 1989; Miles and Huberman, 1994; Yin, 1994). The verification process is suggested by Eisenhardt (1989), to confirm the relationships using case evidence. Hence, the author revisited case study companies and collected further data, specifically focusing on the relationships within the proposed theory model. Four important areas were examined: housing loans, credit cards, trade finance, and the branch channel. Empirical data was gathered from employees at different organisational

levels: senior executive, operations manager, internal consultant, and operations employees. The interviewees were coded and summarised for further referencing in the analysis stage, which is provided in Appendix 6. The semi-structure interview was again the primary data collection approach; however, questionnaires were also used in case of limited access. For the first time in this study, the author was permitted to gather data directly from bank customers. Both qualitative and quantitative data, derived from this phase, was subjected to an analysis using a triangulation approach aimed at increasing the reliability and validity of empirical findings (Jick, 1979).

Four relationships were proposed pertaining to the second theory model in Figure 6.1 below. The remainder of this section provides a comprehensive and detailed account of the empirical evidence, and its analysis, to characterise the underlying relationships in the theory model.

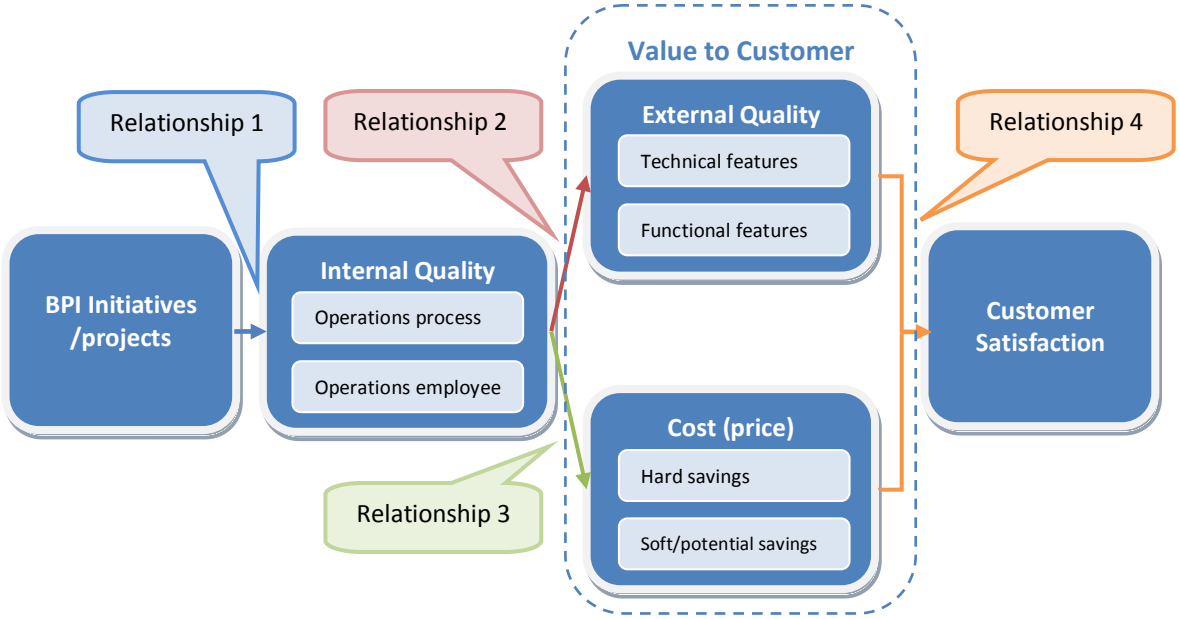


Figure 6.1: Four main proposed relationships in the theory model

6.1.1 Relationship 1: A BPI initiative will help in improving the internal quality dimension

This relationship was investigated through the first two phases of this research. Empirical evidence suggested that the BPI initiatives explicitly helped in improving the internal quality dimension, both in terms of operations processes and employees. Key experts also strongly supported the contention that a positive impact on the internal quality dimension is a direct outcome of a BPI initiative, which could be measured

objectively. The operations employee aspect was also incorporated to provide a comprehensive picture of the internal quality dimension. At this stage, the relationship was further examined through key groups of employees, aiming to obtain insights from people at different organisational levels. The empirical evidence will be analysed before summarising the findings for justifying this relationship.

6.1.1.1 Senior executive interviews

Senior executives suggested that the strategic direction of the BPI initiative in the financial services was mainly based on the customer-focused approach (EA2, EA3, EC2, EC3, EC4, EC5). They confirmed that the adoption of existing BPI initiatives, e.g. Six Sigma, Lean and TQM, helped primarily in improving the efficiency of operations processes, in turn enhancing customer satisfaction (EC2, EC3, EC4). As evidence, BPI initiatives were typically adopted in the back operations processes. Process improvement criteria were time, cost, and quality implications (EC4). The first vice president of the consumer credit product operation said that:

> "Our department has adopted Six Sigma and Lean concept to improve the back operations processes for reducing the cycle time of loan approval, number of rework, and non-value added activities etc. We aimed to facilitate the front operations in delivering customers with high quality of service under the slogan of 'better speed with high quality at competitive price', for increasing customer satisfaction compared to other competitors (EC4)"

The adoption of a BPI initiative also impacts on operations employees. Senior executives suggested that the BPI initiative facilitated and encouraged employees to work more productively through skill development and training, and attitude changing schemes (EA2, EA3, EC4, EC5). It was noted that a reward and recognition programme was complementary to a BPI initiative, aiming to motivate employees in pursuing improvement goals effectively. The first vice president of the trade finance department explained that:

> "We adopted TQM and Lean concept not only for improving the operations process, but also developing and encouraging our staff to work more efficiently under the same strategic direction. To achieve our objective, we also employ the individual performance measurement and reward and recognition programme because we believe that our staff is the key important driver for improving the process efficiency (EC5)"

Overall, senior executives confirmed the relationship of the BPI initiative and internal quality dimension. These results were consistent with the empirical evidence in Chapter 4 and the experts' suggestions in Chapter 5.

6.1.1.2 Operations manager interviews

In this section, semi-structured interviews and questionnaires were employed together to understand operational implications towards operations managers and employees respectively. According to the operations managers' standpoints, BPI initiatives helped in improving the efficiency of operations processes (OC1, OC2). The adoption of BPI provided a constructive approach to identify the problems and errors in processes that required improvement (OA1, OC1, OC2). Previously, the operational level was mainly focused on day-to-day operations. Resulting from BPI adoption, operations managers realised the importance of changing their perception to concentrate on the end-to-end business process, for delivering a high quality service to customers. The operations manager of the trade finance department described that:

> "TQM helps me to understand how to improve the operations processes efficiency by considering customer as the main focus. Besides our daily operations, we are also encouraged to improve our processes continuously, aiming to deliver customers with the best service (OC1)"

The 'spoke' manager (trade finance contact-channel) agreed that:

> "As a role of front operations manager, TQM facilitated us to work collaboratively with back operations resulted from focusing on end-to-end process. Since the back operations improve their internal processes, e.g. reducing processing time, and rework, etc. we could, thereby, deliver our customers with the promised speed, and higher accuracy (OC3)"

Empirical evidence illustrated how these managers played a vital role in deploying BPI initiatives into operational areas, referring to both operations processes and employees (OC1, OC3). They had to motivate and educate operations employees to consider customers as their focal objective in BPI adoption (OA1, OA2, OC1, OC2). Nevertheless, the author's direct observations suggested that operations employees sometimes seemed to lack understanding of the broader, customer-focused aspects of BPI adoption.

6.1.1.3 Operations employees interviews

Operations employees strongly agreed that BPI initiatives helped them to work more efficiently by eliminating non-value added activities and errors, redesigning the working operations, and reducing processing time, etc. (SA1, SA2, SA3, SC1, SC2). Hence, BPI initiatives provided employees with more time to focus on sales and services functions, which are their main accountability at the branch channel (SA2, SA3). Empirical findings indicated that operations employees were satisfied with the BPI adoption, resulting in inspiration for delivering customers a high quality of service. The assistant branch manager said that:

> "Resulting from the redesigning of process, the processing time and working flow are radically changed. The outcomes of BPI initiative are very satisfied by operations staff. I have more time to sale bank's products as well as to provide service to customers. Furthermore, this also encourages me to continue improving and developing my skill to deliver customers with the better service quality (SA1)"

The branch operations staff also supported that:

> "After adopting the BPI initiative at the branch, the operations processes were improved significantly. The new standard of working process provided me more time to serve the customer and recommended them about bank's products for increasing profit to our bank (OS2)"

It could be seen that the BPI initiative also impacted on the employees' satisfaction, attitude, productivity, and skill development; which are consistent with the study of Anderson *et al.* (1994b). In essence, the BPI initiative facilitated employees to work on aligning organisational strategy towards customer satisfaction, rather than focusing on daily operations.

6.1.1.4 Relationship 1 - Summary

The strong relationship between BPI initiatives and the internal quality dimension was demonstrated by a chain of evidence throughout this study. In this phase, the relationship was specifically investigated towards key groups of employees to depict the impact of BPI initiatives. Empirical evidence indicated that a BPI helped in improving the internal quality dimension, related to both operations processes and employees aspects, which is in agreement with empirical findings from the first two phases.

Particularly in financial services, the role of a BPI initiative was emphasised as enhancing the operational employees' aspects in terms of satisfaction, attitude, skill development, and productivity. These were also suggested by senior executives as supporting factors to achieve the objective of BPI. The finding provided an important result: that the improvement of these employee aspects would positively impact on both operations processes and quality of service, thereby increasing customer satisfaction, which reflects the studies of Anderson *et al.* (1994a), Dumond (2000), and Yee *et al.* (2008). To portray the relationship between a BPI initiative and internal quality dimension, key supporting evidence is summarised in Table 6.1.

Table 6.1: Summary of empirically supported relationships between BPI initiative and internal quality dimension

Source of empirical evidence	Internal quality	
	Operations process aspect	**Operations employee aspect**
The exploratory empirical study (research phase 1)	All investigated projects aim to improve the operations process including processing time, WIP, number of reworks and non-value added activities.	BPI adoption in services is concerned with improving the human aspects (e.g. skill development and training, attitude towards change).
Key expert interviews (research phase 2)	The operations process aspect is typically set as the target of BPI projects. This can be explicitly measured and viewed as direct outcomes of the BPI initiative.	The operations employees play an important role to deliver the financial services to customers. Employees' role cannot be separated from the operations process (simultaneously). The employee aspect is therefore critical to the BPI adoption in services.
Senior executive interviews (research phase 3)	The objective of BPI adoption is to improve the efficiency of operations processes related to three dimensions of time, cost, and quality.	Operations employees are critical to the success of BPI adoption in the financial services. The improvement of employees would enhance both operations efficiency and quality of services, as perceived by customers.
Operations managers interviews (research phase 3)	BPI adoption focuses on improving the operations processes e.g. SLA, non-value added elimination, failure reduction etc. It explicitly helps to improve and to standardise the working procedures.	The customer-focused approach of BPI helps and motivates employees to focus on end-to-end process, rather than daily operations. This approach is critical to the customer perception and satisfaction.
Operations employee interviews (research phase 3)	BPI adoption helps employees to work more efficiently by eliminating non-value added activities, redesigning the working operations, and reducing processing time. The operations employees have more time to focus on sales and services functions.	Human aspect is crucial part of BPI adoption in the financial services. The improvement of employees' aspects is a key success factor to achieve the BPI target.

6.1.2 Relationship 2: The internal quality dimension is closely linked with the external quality dimension

Empirical evidence from Chapter 4 suggested that customers cannot directly perceive that better quality of service has resulted from any specific BPI initiatives. Nevertheless, key experts and practitioners strongly supported the need to understand how the outcomes of BPI linked to customer satisfaction. Hence, the external quality dimension was incorporated in the theory model, aiming to assess how the outcomes of a BPI initiative impact on quality of service, as perceived by customers. This illuminated an understanding of the relationship between internal and external quality dimensions. This insight provides a significant foundation of the theory model, and is also valuable for developing the BPI evaluation framework in Section 6.3. At this stage, data was gathered through interviews with employees at different organisational levels. Furthermore, a questionnaire survey was also employed for triangulation purpose. Since there were a limited number of informants, the author utilised the quantitative questionnaire data as supportive evidence to supplement the qualitative findings.

6.1.2.1 Senior executive interviews

Senior executives believed that the outcomes of a BPI initiative definitely impact on the customers' perception, in turn enhancing their satisfaction level (EC2, EC3, EC4, EC5). The different perspectives of process and customer, as previously discussed in Section 5.2.1, was again highlighted to confirm the close relationship between internal and external quality dimensions. The first vice president of the consumer loans product explained that:

> "At our department, we continue improving our internal processes, aiming to deliver customers with high quality financial products and services. Our bank has changed the direction from giving customers with good financial products to providing them with high quality of service (EC2)"

Furthermore, the first vice president of the trade finance department agreed that:

> "The TQM adoption helps us to focus not only improving the back operations, but also leading us to consider the end-to-end business process. The results from improvement initiatives facilitated us in enhancing the customers' perception both in terms of higher quality of products, e.g. speed, accuracy, and better quality of service delivery (EC5)"

To summarise, the direct outcomes of a BPI initiative on internal quality were considered as an essential value-added input to the external quality dimension, through both technical and functional features as perceived by the end customers. This notion supports the study of Butz and Goodstein (1996) that suggest that the pursuit of BPI/ QI initiative success must be based on an understanding of customer value (as described in Section 5.4) for enhancing customer satisfaction.

6.1.2.2 Operations manager and employee interviews

The efficiency of an operations process was critical in delivering a high quality of services to customers (OA1, OA2, OC1, OC2, OC3). Operations managers suggested that BPI initiatives helped to improve the processing time, non-value added activities, rework etc., which impact on how customers perceive the quality of service particularly in terms of technical features. This was consistent with Kaplan and Norton (1992) who suggested that quality can be perceived and evaluated by customers through the on-time delivery and accuracy of service, which reflect the key measures of technical features of external quality dimension. An operations employee described that:

> "After improving and redesigning our internal processes, I could serve customers with better speed, high accuracy within service level agreement. I noticed that customers are satisfied with the new improved service, which has also been found less complaints (SA3)"

The assistant branch manager supported that view:

> "Rather than improving the internal operations, we also improved our skill and productivity through the BPI initiative. These are important in delivering our customers with higher service quality, both in terms of financial products and services (SA1)"

Branch managers also asserted that the improvement of operations processes assisted in delivering customers a higher quality of products and services, which was imperative for increasing customer satisfaction (BM1, BM2, BM3, BM4, BM8, BM9). Additionally, they agreed that improvement and training resulting from BPI also facilitated employees to deliver a better quality service. This finding aligns with Douglas and Fredendall (2004) who underline the important role of employees in enhancing the outcomes of improvement initiative to increase customer satisfaction.

At this point, then, the qualitative evidence from the operational level supported a close relationship between internal and external quality dimensions. To attempt triangulation of this point, thirty questionnaires were administered through branch managers and contact-employees, aiming to provide some quantitative data as supporting evidence. The informants were asked to justify the importance of internal quality improvement, resulting from the BPI initiative, towards the external quality dimension, using a seven-point Likert scale. Survey results are provided in Appendix 9 and 10. The descriptive statistics are summarised in Table 6.2.

Table 6.2: The descriptive statistics of relationship between internal and external quality dimension

External quality dimension	Branch managers (N=15)		Branch staffs (N=15)		Average (N=30)	
	Mean	Std. deviation	Mean	Std. deviation	Mean	Std. deviation
Technical features aspect						
Accuracy	6.60	0.51	6.53	0.52	6.57	0.50
Speed	6.67	0.49	6.53	0.52	6.60	0.50
Flexibility	6.13	0.64	6.00	0.76	6.07	0.69
Functional features aspect						
Reliability	6.02	0.84	5.96	1.13	5.99	0.99
Responsiveness	5.80	0.97	5.82	0.78	5.81	0.87
Assurance	5.87	1.06	5.73	0.65	5.80	0.88
Empathy	5.67	1.26	5.62	0.78	5.65	1.04
Tangible	5.50	1.48	4.63	1.30	5.07	1.45

The descriptive analysis results showed that the average score of technical features are very high, all of which are greater than 6.00 ($Mean_{acc}$ = 6.57, $Mean_{spe}$ = 6.60, $Mean_{Fle}$ = 6.07). Furthermore, the results indicated the moderately high score related to the functional features aspect ($Mean_{rel}$ = 5.99, $Mean_{res}$ = 5.81, $Mean_{ass}$ = 5.80, $Mean_{emp}$ = 5.65). The tangible factor score seems, however, to be relatively low compared with other factors ($Mean_{tan}$ = 5.07). The standard deviation of the data gathered was found not significant for statistical interpretation. Nevertheless, these results presented a strong correlation between internal and external quality dimension, which supports the operation managers' view that improvement of internal quality dimension explicitly helps in enhancing the technical features and supporting operations employees in delivering a high quality service, related to functional features, as perceived by customers.

6.1.2.3 The relationship investigation matrix

The author also developed a relationship investigation matrix, aiming to determine the degree of relationship that was thought to exist, between the internal and external quality dimensions. It is noted that the result of this matrix was utilised as supporting evidence underlying the relationship between internal and external quality dimensions, rather than attempting to indicate the causality. All important aspects, based on the empirical findings, were incorporated into this two-dimensional matrix (see Appendix 5 – section 3). In total, four senior executives, and six operations managers were asked to justify the degree of relationship between these two dimensions. The available scores ranged from 0 (no relationship) to 3, (very strong relationship). The limited number of informants was inadequate for a statistical interpretation. Therefore, colour-codes were applied to signify the degree of relationship as summary matrix in Figure 6.2.

Quality Dimension			Internal Quality							
			Internal Operations Process				Internal operations employee			
			Processing time	Work in process	Number of rework	Non-value added / wastes	Job Satisfaction	Attitude towards BPI	Productivity	Skill development/ training
External Quality	Technical features	Accuracy of service	1.100	1.300	2.500	0.900	1.600	2.000	2.200	2.700
		Speed of service	2.800	2.500	2.200	1.500	1.500	1.900	2.600	2.600
		Flexibility of service	1.900	1.400	1.100	1.600	1.600	2.500	1.800	2.500
	Functional Features	Reliability	2.100	1.900	2.500	1.700	2.000	2.000	2.500	2.700
		Responsiveness	2.100	1.800	2.400	1.600	2.600	2.000	2.500	2.700
		Assurance	1.400	1.500	1.800	1.900	1.600	2.100	2.000	2.500
		Empathy	1.200	1.200	0.900	0.900	1.900	1.000	1.000	1.700
		Tangibles	1.100	1.000	0.800	0.500	0.700	0.800	1.000	1.100
Price(Cost)			2.500	1.700	2.500	2.100	2.000	1.700	2.100	1.800

Figure 6.2: The relationship investigation matrix

Very strong relationship (score = 2.5-3)

Moderate relationship (score = 1.5-2.0)

Strong relationship (score = 2-2.5)

No and Weak relationship (score 0-1.5)

The operations process was found to be closely linked with the technical features aspect. The *very strong relationships* indicated that processing time and work in process were critical to the speed of service, while the number of rework was critical to the accuracy of service as perceived by customers. Additionally, *strong relationships* were also found between internal operations processes and functional features, particularly in reliability and responsiveness, which reflects the findings of Newman (2001) in a UK bank, that improvement initiative helps in enhancing hard aspects of service quality (reliability and responsiveness). At this point, *weak relationships* were observed through the internal quality dimension on both empathy and tangibles of functional features. This could imply that the improvement of internal quality may not necessarily help in enhancing these two criteria of external quality dimension.

Furthermore, the relationship investigation matrix suggested that the operations employee was closely linked to both technical and functional features aspects. Skill development and productivity of employees represented a *very strong relationship* with both technical and functional features, whereas the attitude of employees towards the BPI initiative was also significant to the flexibility of service provided to customers. The investigation matrix highlighted the importance of employees delivering a high quality of service to customers. This implication was in line with both studies in the financial services of Scheider and Bowen (1995) and Howcroft (1993), which suggest that employees' attitude and satisfaction were found to impact positively on service quality, particularly on soft aspects related to the functional features. In brief, the results supported the proposition that internal quality is closely linked with the external quality dimension. The very strong relationships were emphasised for both: 1) operations process and technical features, and 2) operations employee and functional features.

6.1.2.4 Relationship 2 - Summary

In this section, both qualitative and quantitative findings support a strong relationship between internal and external quality dimensions. Empirical evidence revealed that an improvement of 'internal operations process' was critical to the customers' perception related to the technical features aspect (e.g. speed, accuracy, etc.). Additionally, the 'internal operations employee' was considered as an important driver of BPI initiatives for enhancing the quality of both technical and functional service features. This is

consistent with findings from Voss *et al.* (2005) which underlined that employees are crucial factors for enhancing service quality, in turn increasing customer satisfaction. The findings confirmed the relationship between internal and external quality dimensions, also reflected in the BSC of Kaplan and Norton (1992). Practically, this helped operations managers to recognise which operations process require an improvement to achieve customer requirements and expectations, as suggested by Crosby (1991), Boaden and Dale (1993) and Amaratunga *et al.* (2001). Hence, an understanding of the linkage between internal and external quality dimensions strengthened the foundation of the model, also providing a basis for evaluating the BPI outcomes from the perspectives of process and customers, as suggested by Flynn *et al.* (1994). To depict how this relationship was articulated, the empirical findings are summarised in Table 6.3.

Table 6.3: Summary of empirically supported relationships between internal and external quality dimensions

Dimension	Internal operations process	Internal operations employee
Technical features	Key groups of employees highlighted that BPI outcomes towards the internal operations processes were closely linked with the technical features, including speed, accuracy and flexibility. This relationship identified was consistent with findings from case studies and expert interviews.	The improvement of operations employee aspect was significant in delivering the high quality of service towards the technical features, such as skill development, and improved productivity resulting in the improving of speed and accuracy.
	The strong correlations between operations processes and technical features were found greater than 6.00 of a seven-point Likert scale. The very strong relationships were also found through the investigation matrix, particularly on the speed and accuracy of service.	Resulting from the investigation matrix, operations employee aspects represented the strong correlations with technical features. It was noted that the employee satisfaction was found not highly impact on technical features.
Functional features	Less empirical evidence showed that the operations process aspects are directly linked with functional features. This might be some degree of overlapping between technical features and hard aspect of functional features such as speed and reliability of service.	Operations employees were considered critical in customers' perception related to the functional features. It is important that operations employees have to be aware that their responsibility will directly impact on the end customers.
	The results from both quantitative investigations suggested and supported that the operations process aspect is closely linked with functional features, specifically on reliability, and responsiveness. It could be noticed that these two aspects might share some degree of overlapping with technical features.	The quantitative results indicated very strong relationships between operations employees and functional features, especially in reliability, responsiveness, and assurance. This supported the qualitative findings that operations employees play an important role in providing customers with high service quality, related to the soft aspects.

Remark: Qualitative evidence Quantitative evidence

6.1.3 Relationship 3: The internal quality dimension is closely linked with the cost/ price dimension perceived by customers

Empirical evidence suggested that the cost dimension is one of the most important factors that drive financial institutions to adopt BPI initiatives for improving the internal operations processes. From the business standpoint, top-level senior executives emphasised the importance of BPI initiatives for cost reduction, pertaining to both hard and soft savings (EA1, EB1, EC1). Archival documentation from case companies A and B also indicated the importance of cost reduction for evaluating the success of BPI projects. The quality leader of company B asserted that:

> "At our company, the improvement projects aim primarily to improve the operations processes for increasing the efficiency and productivity. Nevertheless, all these improvement criteria lie in the focal objective of cost reduction, thereby achieving the long term profitability. The success of all improvement projects were evaluated in terms of dollar-saving (EB1)"

This empirical evidence was in line with research numerous results that indicate that operations improvement reduce costs associated with defective products and services, time utilisation, rework, and work in progress, etc. (e.g. Garvin, 1987; Anderson *et al.*, 1994b). Thus, it was vital for companies to improve operations processes to achieve cost reductions, which impacts on price as perceived by customers. At this stage then, evidence suggested a positive impact of process improvement on the cost/price dimensions. To broaden the understanding relationship of these dimensions, the author investigated the price of four financial services.

Financial institutions' main sources of income generation include 'fees' and 'interest' charged to customers (EA2, EA3, EC2, EC3, EC4, EC5). Jointly, these will be perceived as the service 'price' by customers. Previously, the pricing of financial services played an important role in acquiring customers to compete with other banks (EC2, EC3, EC5). However, all senior executives explained that pricing in the Thai financial market is currently almost the same. The existing pricing of housing loans and credit cards did not differ significantly among leading financial institutions. This deterioration in price competition is the result of pressure in a highly aggressive market. Senior executives suggested that banks typically try to provide customers with a low-interest rate to maintain existing customers, whilst giving a persuasive discounted rate

to new customers (EC2, EC3). Secondly, fee-based incomes were almost the same for each service. These resulted from Bank of Thailand regulations that controlled the ceiling price of fee-bases in financial institutions. At this stage, the author further investigated the pricing of housing loans in five leading financial institutions, aiming to confirm the evidence resulting from senior executive interviews. Housing loan pricing was summarised in Appendix 11.

These results revealed that the pricing of financial services varied little among Thai financial institution. This leads to an important agenda for Thai financial institution: to adopt various BPI initiatives to improve operations process and hence reducing cost. The assistant vice president of branch operations department said that:

> "Six Sigma initiatives help us improving the efficiency of the operations processes (e.g. cycle time reduction, non-value added and wastage elimination). This significantly reduced our operating cost such as reduction the number of staff, wastage in the process etc. (OA1)"

The author considered this proposition by re-examining the results from the relationship investigation matrix (see Figure 6.2). Very strong relationships were found between internal quality and cost/price dimensions. Particularly in the operations process aspect, the reduction of processing time, rework and waste were critical to the cost dimension. In this sense, quality-related cost is a comprehensive measure of the progress and success being made by BPI initiatives (Boaden and Dale, 1993). The operations employees also represented a strong relationship with the cost dimension, through their satisfaction and productivity. Overall, the evidence confirmed that internal quality was closely linked to the cost dimension, agreeing with Gustafsson *et al.* (2003), and Bateman and David (2002) that the improvement of operations processes resulting from BPI/QI initiatives, explicitly helps a company to improve efficiency and productivity, in turn lowering the cost of operations to achieve long term profitability.

6.1.4 Relationship 4: The external quality dimension and price are the key mediators of BPI methodology adoption as regards customer satisfaction

Empirical evidence revealed that case companies paid less attention to evaluating the outcomes of BPI initiatives from a customers' viewpoint. Nevertheless, both experts and practitioners strongly suggested the importance of assessing BPI from a customer

perspective, as highlighted in the literature (Dean and Bowen, 1994; Flynn *et al.*, 1994; Detert and Schroeder, 2000; Douglas and Fredendall, 2004; Dabholkar and Overby, 2005; Voss *et al.*, 2005). A questionnaire was therefore developed, adapted from SERVQUAL, to examine how the perceived features of external quality and price influenced customer subjective satisfaction (Appendix 5 – section 4). In total, 63 questionnaires were administered with customers at case companies A and C. (details in Appendix 12). The descriptive statistic results are provided in Table 6.4.

Table 6.4: Summary of descriptive statistic results of customer survey

Quality dimension	Average score (Mean)	Standard deviation (SD)	Average score of each criteria
Technical Features			6.01
Accuracy of service product (accuracy of loan contract, information)	6.16	0.99	
Speed of service product (loan approval period)	6.08	1.00	
Flexibility of service product (customise to suit the need)	5.79	1.05	
Reliability			5.98
Provide service as promised (e.g. loan approval on time, call back as promised)	6.11	1.02	
Keep informing the change and progress of your service and transactions	5.60	1.20	
Provide accurate service (right at the first time) with error-free transaction	6.10	1.00	
Able to handle your questions and problem	6.13	0.94	
Responsiveness			6.15
Willing to help and to provide service	6.30	0.93	
Response to your request	6.08	0.97	
Provide prompt service (speed and efficiency)	6.16	0.92	
Available to answer your questions	6.05	0.97	
Assurance			6.25
Provide safe and confident transaction	6.37	0.75	
Ability and knowledge to answer your enquiries	6.14	1.06	
Politeness and courteousness of staff	6.24	0.89	
Trustworthiness and confidentiality	6.27	0.83	
Empathy			6.28
Attentiveness to your banking needs	6.29	0.87	
Recognise you as first priority	6.32	0.80	
Available to help and answer your questions	6.27	0.81	
Friendliness and caring	6.25	0.88	

Table 6.4 (continued): Summary of descriptive statistic results of customer survey

Quality dimension	Average score (Mean)	Standard deviation (SD)	Average score of each criteria
Tangibles			6.09
Attractive facilities (Appearance, convenience, cleanliness, tidiness)	6.10	1.13	
Modern-looking equipment (e.g. automated machine, ATM)	6.11	0.84	
The neat appearance of contact staff	6.14	1.06	
Document and material associated with service (contract, statement)	6.02	1.26	
Price of service			5.77
Fee/ charge per transaction	5.81	1.16	
Interest rate compared with other banks	5.73	1.31	

The results indicated strong correlations between external quality and customer satisfaction. Almost all average scores were considered high, meaning greater than 6.00 on a seven-point Likert scale. It could be observed that both technical and functional features were critical to the customers' subjective satisfaction. At this point, the average score of empathy and tangible were found important to the satisfaction of customer, whilst the results from the investigation matrix (Figure 6.2) suggested that these two aspects have been found weak in relationship with the internal quality dimension. This could imply that BPI initiatives have less impact on these soft aspects. Furthermore, it can be seen that the correlations between price and customer satisfaction were found the least important, although at 5.77 the average score was still moderately high. Hence, the price should be also considered as an important mediator, besides external quality dimension, of BPI adoption as regards to customer satisfaction.

It can be observed that the average score of functional features seems to be higher than those of technical features and price dimensions, as regards customer satisfaction. This suggested the point - as widely argued by key scholars (e.g. Parasuraman *et al.*, 1985 and Grönroos, 1984) - that functional service quality tends to be more important to customers' perception of the quality than technical service quality. Because of the limitation of access, the number surveyed was too small to draw a valid conclusion at this stage. The author, therefore, continued investigating this issue by discussing with practitioners.

Senior executives were asked to clarify their view of customer expectation in financial services. They suggested that customer expectation has changed from receiving the financial products (e.g. housing loans, credit cards etc.), to obtaining a financial services. From the viewpoint of the provider, the quality of a financial service can be viewed as two dimensional, encompassing:

- *The financial product* is directly related to the product specification, compared with manufacturing goods (service level agreement, price, features of financial product, etc.). This aspect is closely linked to the technical features of service.
- *The financial services* result from the interaction between contact-employees and customers during the service delivery process. This aspect is closely linked to the functional features of service.

The customer expectation criteria were summarised pertaining to the financial product and service aspects in Table 6.5. These two aspects were important to customers' subjective justification of their satisfaction level, which could be referred to the external quality dimension (EA2, EA3, EC2, EC3, EC5). Senior executive also mentioned that these two aspects could not be viewed separately, because they functioned simultaneously in delivering high quality of service to satisfy customers.

Table 6.5: The customer expectation in the financial services

Customer expectation	Criteria	Implication
Product expectation	Speed (committed SLA) Price (interest and fee) Accuracy Flexibility (product features)	All product expectation criteria are closely related to ***technical*** features of service quality
Service delivery expectation	Hassle-free service After sales service Attentively service Responsiveness Reliability Convenience Relationship with contact staff	All service delivery expectation criteria are closely related to ***functional*** features of service quality

In summary, the findings indicated positive relationships between external quality and cost/price dimensions towards customer satisfaction. These two dimensions, together, were essential to the financial institutions in delivering the highest 'value' to customers. This finding was in line with the Cronin and Taylor (1992), Anderson *et al.* (1993), Lassar *et al.* (2000), Douglas and Fredendall (2004) all of whom support the positive

impact between customers perception of service quality and their satisfaction. Hence, the empirical findings strongly supported Relationship 4, the proposition that external quality and price are key mediators of BPI methodology adoption as regards customers.

6.2 THE FINAL THEORY MODEL

The development of the final theory model has been explained and justified with key empirical findings from the three main phases of this research study. Theory elements were developed first, grounded in the evidence from the case studies, mainly focusing on the operational level of BPI initiatives (i.e. projects). Secondly, underlying definitions of each theory elements were refined and validated, using experts' suggestions and key literature, thereby providing valid constructs. The customer value concept was incorporated to enhance the underlying concept of the theory model. In this chapter, the four main relationships were established through revisiting the case studies. The final theory model is shown in Figure 6.3.

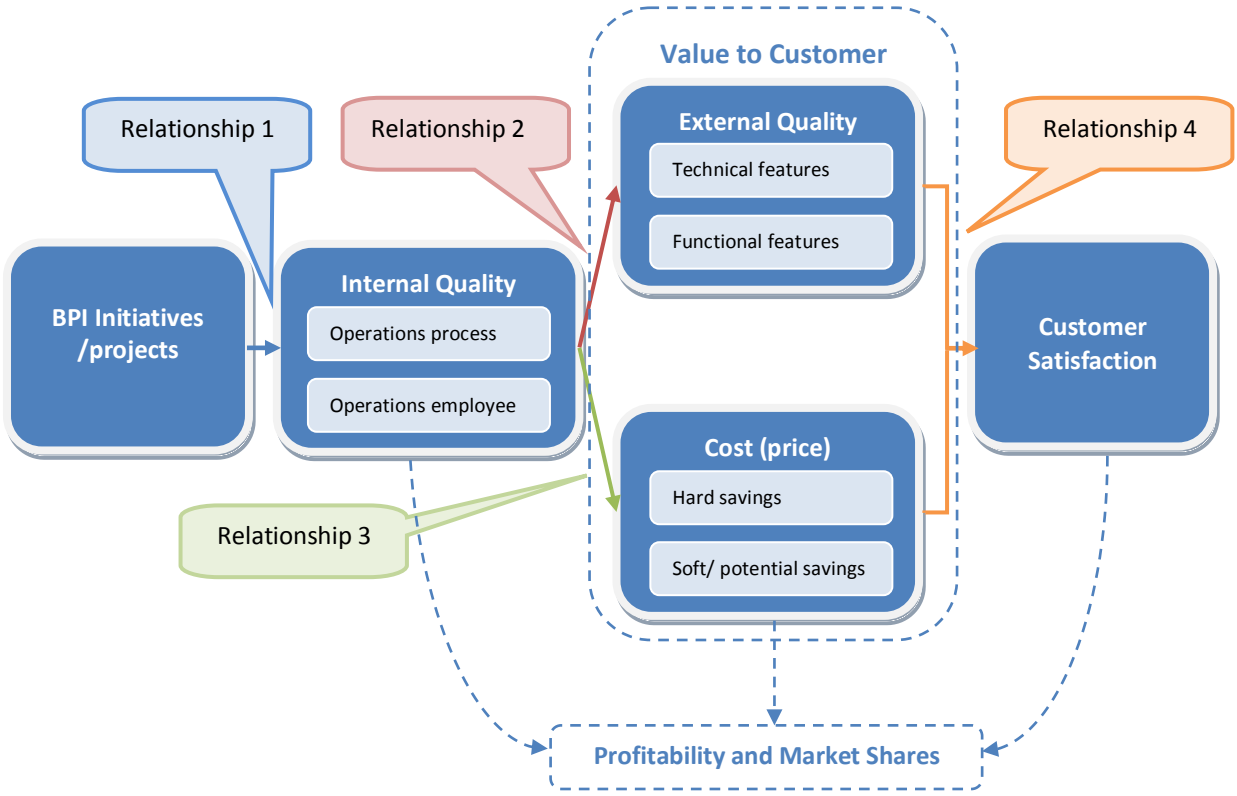


Figure 6.3: The final theory model

The final theory model provided a good basis for development of a BPI evaluation framework that would help practitioners in sustaining a continuous improvement effort, which appears to be a weakness of the current practice. The following sections will explain how the BPI evaluation framework was developed to assess the outcomes of BPI initiative at project-level.

6.3 THE DEVELOPMENT OF A BPI EVALUATION FRAMEWORK

The empirical findings observed in Chapter 4 revealed an ineffective evaluation of BPI initiatives in the institutions, particularly a lack of consideration of soft aspects. BPI initiatives, such as Six sigma, Lean and TQM, have been criticised for an excessive focus on measuring the process, rather than the outcomes of the initiative itself (Neely *et al.*, 1995). Additionally, the evaluation of BPI initiatives has also been claimed to be under studied, related to the evaluation in practice (Adesola and Baines, 2005). These authors suggest the importance of identifying explicit criteria for assessing the outcomes of BPI, based on multi-dimensional perspectives. Therefore, this section intends to address this issue by exploring key performance measurement frameworks to provide some guidelines for practitioners in evaluating company BPI initiatives at the operational, or project level.

This section will reflect the proposed theory model on existing performance measurement frameworks, aiming to propose guidelines for evaluating BPI project outcomes. In Section 6.3.1, important criteria for evaluating projects in the financial services sector are identified by comparing and contrasting the theory constructs with performance measurement literature, previously reviewed in Section 2.4. Guidelines for developing a suitable BPI project evaluation framework are proposed in Section 6.3.2. Section 6.3.3 describes step-by-step guidelines for evaluating BPI projects, using an MS Excel spreadsheet-based approach as initial guidance for practitioners. This evaluation framework is provided, suggesting a potential use in practice..

6.3.1 The reflection of the proposed theory model

Five developed theory constructs (from Section 6.2) will be discussed in relation to the performance measurement dimensions, in the context of the literature, to justify the

appropriateness of the proposed BPI evaluation framework developed from the final theory model.

6.3.1.1 BPI adoption

This construct represents the top view of the methodology that was adopted in the organisation. The measures used to assess the outcomes of BPI adoption should portray the overall performance perspectives that could link the BPI initiatives with the organisational strategy. Based on the BSC and Performance Measurement matrix, Neely *et al.* (2000) suggested that the set of measures used in the top level has to provide *a balanced picture of the business*, which should reflect internal and external measures, efficiency and effectiveness measures, and financial and non-financial measures.

The theory model focused on both internal and external measures, which are relevant to the efficiency and effectiveness as suggested by Neely *et al.* (1995), and financial and non-financial measures as proposed by Keegan *et al.* (1989), and Fitzgerald *et al.* (1991). Based on the theory model, four key criteria for evaluating the outcomes of BPI adoption are internal quality, external quality, cost, and customer satisfaction. These criteria are aligned with key performance measurement dimensions. Therefore, the theory model would help in reflecting the outcomes of BPI initiative by considering *multi-dimensional perspectives*.

In contrast with many performance measurement frameworks, the proposed model also attempts to identify the relationships between the different dimensions, considering the logical consequence of the business process to be improved. The concepts underlying the theory model, however, have some similarities with Fitzgerald *et al.* (1991) in that the end result is a function of determinants. Likewise, the model shared some relevance with the Brown (1996), who provided an understanding between performance measurement towards business process view in terms of inputs, processing system, outputs, outcomes, and goals. Although these two frameworks shared some similarities with the model, they did not provide the linkage demonstrating the relative importance between each dimension as the theory model achieved.

In summary, a performance measurement system at the top level aims to clarify the measures related to 'what' strategic initiative the organisation is trying to achieve. However, the author also attempted to take an operational-level view of performance measurement frameworks to provide an effective measurement system for evaluating BPI initiatives at the project-level, based on the identified criteria in the final theory model, rather than focusing on the strategic level.

6.3.1.2 Internal quality dimension

The internal quality dimension was mainly focused on understanding the direct outcomes of BPI initiatives. This dimension consists of internal operations processes and internal employees aspects. A set of measures were defined, grounded in the empirical findings in Chapter 4.

The internal operation process aspect is closely related to the internal measures terms defined in existing performance measurement frameworks. Keegan *et al.* (1989) suggested that it is important to provide internal measures linked to cost perspectives pertinent to the financial performance of the organisation. Fitzgerald *et al.* (1991) pointed out that performance measurement systems should combine both internal and external measures, to assist a company in assessing the true value of service for enhancing customer satisfaction, while in Brown's framework (1996), the internal quality dimension can be considered as the prerequisite of the external quality dimension.

Furthermore, the internal quality dimension is relevant to one of the fundamental dimensions of performance, or efficiency as suggested by Neely *et al.* (1995). They viewed efficiency as a measure of how economically the firm's resources are utilised for pursuing the specific course of action to provide a level of customer satisfaction. The efficiency dimension involves both internal operations processes and employee aspects of the theory model. Improvement of efficiency can help in reducing the cost of business as well as improving the effectiveness, both of which are highly relevant to the underlying relationships between internal quality, external quality and cost dimension, in the theory model.

The internal employee aspect was found to be important in measuring the outcome of BPI initiatives in the financial services. This aligned with the Performance Prism principle that suggests the importance of considering all stakeholders as central to performance measurement systems (Neely, 2002). As well as shareholders, other related stakeholders, such as employees and customers, should be taken into consideration. In the EFQM Business Excellence Model, the internal employee is an important category for measuring the performance within the organisation. The internal employee aspect can be measured in terms of employee satisfaction, developing skill, and productivity which are considered as a source of competitive advantage that enables a company to gain higher profit margin, or reduce price to its customers (Fitzgerald *et al*., 1991). In order to drive the internal operations improvement, Kaplan and Norton (1992) suggested that the internal employee is an imperative mechanism which drives the strategic initiative into action.

Hence consideration of the internal quality dimension in the context of performance measurement frameworks indicates its importance to both external quality and cost dimensions as proposed in the theory model. Therefore, it is crucial that a BPI evaluation framework must recognise the balance between internal and external quality dimensions, to help develop effective and representative outcome metrics. The relationship investigation matrix developed in Section 6.1.2.3 was helpful for understand this relative importance in developing the evaluation.

At this point, the internal quality dimension seems not to directly impact on the customer perspective. However, it is important that an organisation should translate the customer-based metrics into what the internal operations need to do, in order to meet customers' expectation, hence reflecting the internal business perspective of the BSC (Kaplan and Norton, 1992). Understanding these relationships can provide the practitioner with better appreciation of the true value of BPI outcomes, helpful in sustaining a continuous improvement effort for achieving long term profitability.

6.3.1.3 External quality dimension

The external quality dimension aimed to provide an understanding of outcomes, which can be perceived by external customers. Technical and functional features were

considered key measures corresponding to how the customer perceived the service quality. The technical features consist of the service attributes, while the functional features represent the outcomes associated with customer interaction during service delivery.

Because customers often cannot directly perceive that a better quality of service resulted from a BPI initiative, it is vital to understand the outcomes of initiatives through key mediators pertaining to the external quality dimension. Outcomes can be measured both in terms of tangible goods/services, and intangible services (Fitzgerald *et al.*, 1991). This underlying concept also reflects on the categorising of technical features and functional features of external quality dimension.

The external quality dimension is intimately related to the effectiveness proposed by Neely *et al.* (1995). It could be referred to as the outcome of a business process related to the customers' requirements, both hard and soft aspects of service quality. Similarly, the external quality dimension is comparable to the perceived quality determinant in European Customer Satisfaction Index (ECSI) by considering two elements: (1) the quality of product/service attributes which is equivalent to technical features, and (2) the quality of the service interaction process which is related to the functional features (Kristensen *et al.*, 2002). The underlying concept of external quality also reflects the customer perspective measures in the BSC, by considering both 'hard' aspects of time and tangible quality measures, and 'soft' aspects linked to service measures - those perceived by customers. The combination of these two aspects would provide an organisation with a better understanding in delivering value to their customers (Kaplan and Norton, 1992).

Performance measurement has, however, often been accused of focusing narrowly on the quantifiable aspects such as cost and productivity, while neglecting other criteria related to soft measures such as service quality and customer satisfaction (Fitzgerald *et al.*, 1991). Furthermore, Neely *et al.* (2000) point out the weakness of a performance measurement system that mainly relies on a one-dimensional focus. These arguments are consistent with the key empirical findings in Chapter 4, that the measurement of BPI outcomes was mainly concentrated on process efficiency and cost savings dimensions, whilst the measurement related to customer perspective was observed to be ineffective.

To summarise, external quality can be considered as the mediator of internal quality outcomes toward customer satisfaction. The limited statistical evidence, resulting from the customer survey in Section 6.1.4, supported the relative importance of external quality dimension on customer satisfaction. This reflects the key suggestion of Fitzgerald *et al.* (1991) that external quality can be measured as regards to customer satisfaction.

6.3.1.4 Cost (price) dimension

The cost dimension aimed to understand the cost reduction resulting from BPI initiatives. This dimension can also be viewed as price, as perceived by customers, as previously discussed in Section 5.2.1. Outcomes of BPI initiatives can be related to either cost or non-cost perspectives, but:

> *'Performance measures must be based on a thorough understanding of cost relationships and cost behaviour.....Keegan et al. (1989, p.48)'*

As empirical findings, the operational measure of the cost dimension is money saving which can be either direct, or indirect savings converted from the internal quality dimension outcomes, such as opportunity cost from non-value added elimination, FTE (full time equivalent) savings etc.

Empirical findings revealed that these measures are not necessary directly linked to cost dimension, as long as companies understand the causal relationship between the measures. An example of the housing loan origination process improvement (PA3) depicts the linkage between BPI initiative outcomes and the cost dimension, as shown in Figure 6.4. For instance, cycle time reduction will increase the efficiency of operations and in turn reduce the cost per transaction. This means that company can either make more profit by charging the same price, or reduce the price to satisfy its customers. Simultaneously, the reduced cycle time also impacts on both speed and responsiveness, as perceived by customers. Where the perceived value, quality against cost/price, is improved, it undoubtedly helps to enhance customer satisfaction.

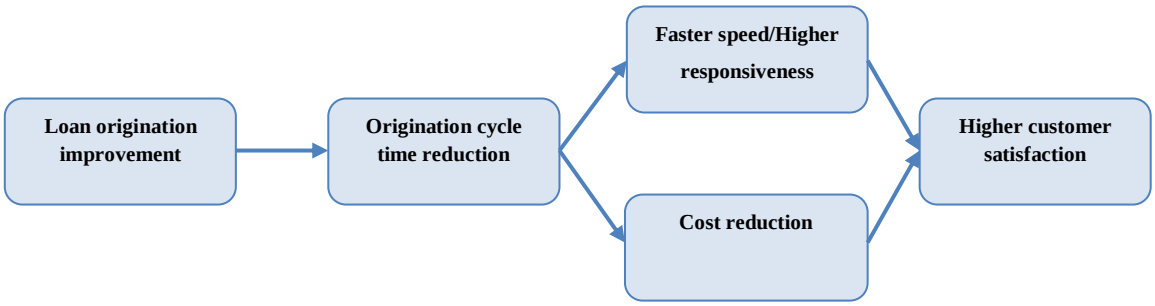


Figure 6.4: The relationship chain of BPI towards customer satisfaction

To summarise, evaluation criteria for BPI initiatives should be focused on the cost drivers and describe them in terms that the operations manager can easily understand. This provides practitioners with an understanding of cost dimension resulting from the initiative, both in terms of operating cost and resources. This can also be associated with predetermined targets, such as improvement of customer satisfaction level (Fitzgerald *et al.*, 1991).

6.3.1.5 Customer satisfaction

Customer satisfaction is the ultimate goal of BPI adoption in the final theory model. The requirement is to understand *how* BPI adoption could improve the overall service quality towards customer satisfaction. The most important criteria for evaluating the satisfaction of customers are based on the customers' perception of quality and price of service. These together define customer value. The case study companies often tried to measure customer satisfaction, but not specifically to evaluate the outcomes of BPI initiatives.

Based on the theory model, the determinants of customer satisfaction should be three: internal quality, external quality and cost dimensions. This reflects the notion that customer satisfaction is a function of determinants as suggested by Fitzgerald *et al.* (1991). Technically, internal quality outcome was considered not to have a direct effect on the customer dimension: this raises an important point, which is that an organisation must translate customer-focused measures into internal measures reflecting factors which are significant to customer satisfaction, as suggested by Kaplan and Norton (1992).

It is apparent that performance measurement frameworks emphasize the importance of measuring customer satisfaction, which is typically used to justify the achievement of strategic actions. Neely *et al.* (1995) highlighted that customer satisfaction was given the strongest weighting in the Business Excellence model of both the US Malcolm Baldrige National Quality Award and the European Quality Award. Hence, an understanding of customer satisfaction is a crucial constituent in sustaining and maintaining the continuous quality improvement effort for achieving the highest levels of business performance (Kristensen *et al.*, 2002). Since the intention of this study is to evaluate the outcomes of the BPI initiative, customer satisfaction was placed as the central objective of the theory model.

As discussed above, external quality and cost dimension were considered as providing the primary additional value to customers, resulting from a BPI initiative. Hence, these two dimensions are the critical mediators in enhancing the customer satisfaction level, as previously discussed in Section 6.1.4. As opposed to performance measurement frameworks, this theory model does not attempt to provide a linkage between BPI outcomes and financial performance aspects (e.g. profitability), because of access limitations to the financial information of the case study companies, and the operational-level focus in this research. This leaves an opening for further empirical research study, which has also been raised by Kristensen *et al.* (2002).

In summary, customer satisfaction has become a prominent measure that provides a company with an understanding of operating performance from the customers' perspective. Consideration of customer evaluation in defining performance measures provides an organisation with a broader, objective view through the customers' eyes (Kaplan and Norton, 1992). Since there is no previous model available, that aimed to assess BPI outcomes by taking a multi-dimensional perspective, the author developed a constructive evaluation framework, based on the final theory model.

6.3.2 The proposed BPI project evaluation framework

Practitioner interviews agreed on the importance of developing a systematic approach for evaluating BPI projects. Evidence of the shortcomings of existing evaluation approaches included the following points:

- The excessive focus on measuring the outcomes of BPI project in terms of efficiency and cost reduction dimension.
- The lack of clarity of the outcomes of BPI project related to soft aspects towards customer perspective.
- The lack of a systematic approach to evaluate the outcomes of BPI projects effectively.
- The cost of evaluation resulted in less attention to evaluating the outcomes of BPI projects, particularly towards customer perspective.
- The existing evaluation approach does not provide a feedback and control system for sustaining a continuous improvement effort.

This clearly demonstrated the needs of practitioners for a systematic approach to evaluate BPI projects more effectively. Therefore, an evaluation framework was proposed, aiming to provide practitioners with clear guidelines to assess project in the financial services context. The criteria identified in Section 6.3.1 were employed to synthesise the evaluation framework.

The key significant characteristics for developing an appropriate evaluation framework, reviewed in Section 2.4.2, were used to clarify how the author synthesised the evaluation framework in the context of performance measurement theory. This context suggested the criteria necessary to identify an appropriate set of measures for assessing the organisational performance (Kennerley and Neely, 2002), as follows:

(1) The proposed evaluation framework was developed to provide ***a balanced picture of the BPI project outcomes*** as suggested by the work of Kaplan and Norton (1992), and Keegan *et al.* (1989). The evaluation criteria applied in this framework reflects financial and non-financial measures, internal and external measures, as well as efficiency and effectiveness measures. The relationships between the theory constructs and measurement frameworks were summarised in Appendix 13.

(2) The proposed framework reflects ***multi-dimensional criteria*** that are important to an understanding of BPI project outcomes. Four important criteria are internal quality, external quality, cost, and customer satisfaction. By considering the strengths of the BSC and Performance Prism approaches, the evaluation

framework aimed to provide a firm basis for covering all important performance and stakeholder perspectives.

(3) The proposed framework provides that ***the results are a function of determinants*** as suggested by Fitzgerald *et al.* (1991). Accordingly, customer satisfaction is considered to be the ultimate result of the BPI adoption, whilst other evaluation criteria (internal quality, external quality, and cost) are viewed as key determinants that drive the true value for enhancing customer satisfaction.

(4) Since the proper goal of BPI projects is improving the end-to-end business process, the proposed theory model helps in ***portraying the integrated picture*** by considering relationships between each dimension. The evaluation framework was therefore synthesised by considering the logical consequence of evaluation criteria towards the business process perspective as suggested by Brown (1996). This provides practitioners with guidelines to assess the relative importance of each criterion for achieving the objective of projects.

(5) The integration of service quality into the final theory model provided ***comprehensiveness*** in understanding project outcomes. Rather than focusing only upon efficiency and cost, the proposed framework also considered subjective measures related to quality of service perceived by customer, as another important criterion in assessing the true value of projects.

(6) The proposed BPI evaluation framework thus aims to provide ***an overview of the overall outcomes of a BPI project*** that is easy to understand and apply to an existing situation. This framework will provide practitioners with a broader view to understand the outcomes of projects by considering both quantitative and qualitative criteria, rather than focusing on process efficiency and cost savings as in the case studies.

The evaluation framework was principally developed from the final theory model in Section 6.2. The evaluation criteria were justified by reflecting on performance measurement frameworks in Section 6.3.1. The framework is also designed to an important basis for understanding the integrated outcomes of a complete company BPI initiative at the strategic level.

From the practitioner points of view, an evaluation framework should be simple and readily applicable to different types of project, rather than complex with high-investment IT solutions. The evaluation framework was therefore developed on an MS Excel spreadsheet commonly used in companies worldwide. The spreadsheet-format will provide users with responsive and flexible utility to apply to different types of BPI project through a well known and user-friendly interface.

The proposed evaluation framework would provide practitioners with a systematic approach for assessing outcomes of BPI projects. This framework will help practitioners in tracking the performance of business process periodically. The outcomes of projects could be recorded as statistical evidence and used for both internal and external benchmarking purposes. This can also help in diagnosing the effects of the projects on multi-dimensional perspectives towards business process efficiency. In brief, the proposed framework was viewed as an important mechanism for moving beyond the internal goals, to search for competitive advantage by focusing on the customer perspective which is vital for generating long-term value in an organisation (Kaplan and Norton, 1993). In the next section, step-by-step guidelines for assessing the outcomes of a project will be explained.

6.3.3 Guidelines for assessing the BPI project

This section describes the guidelines for assessing the BPI project using the proposed evaluation framework. Four main steps were explicated to demonstrate how to follow the evaluation procedure. These step-by-step guidelines included: (1) *reviewing and weighting* the evaluation criteria, (2) *weighting* the importance of BPI project outcomes, (3) *scoring* the outcomes of BPI project, (4) *analysing* the results. Thus, each step will be described in details as follows.

6.3.3.1 Reviewing and weighting the evaluation criteria

Initial evaluation criteria have been provisionally proposed in the evaluation framework spreadsheet. It is important, however, that at ***step 1*** key stakeholders should brainstorm to review, revise and justify all important criteria to be used in evaluating a specific BPI project. Possible stakeholders include the CEO, senior executives, business process owners, BPI project team leaders, operations managers, and operations employees.

After justifying the criteria for a particular BPI project, stakeholders should also clarify the weighting score of each criterion depending on the characteristics and objectives of the specific project.

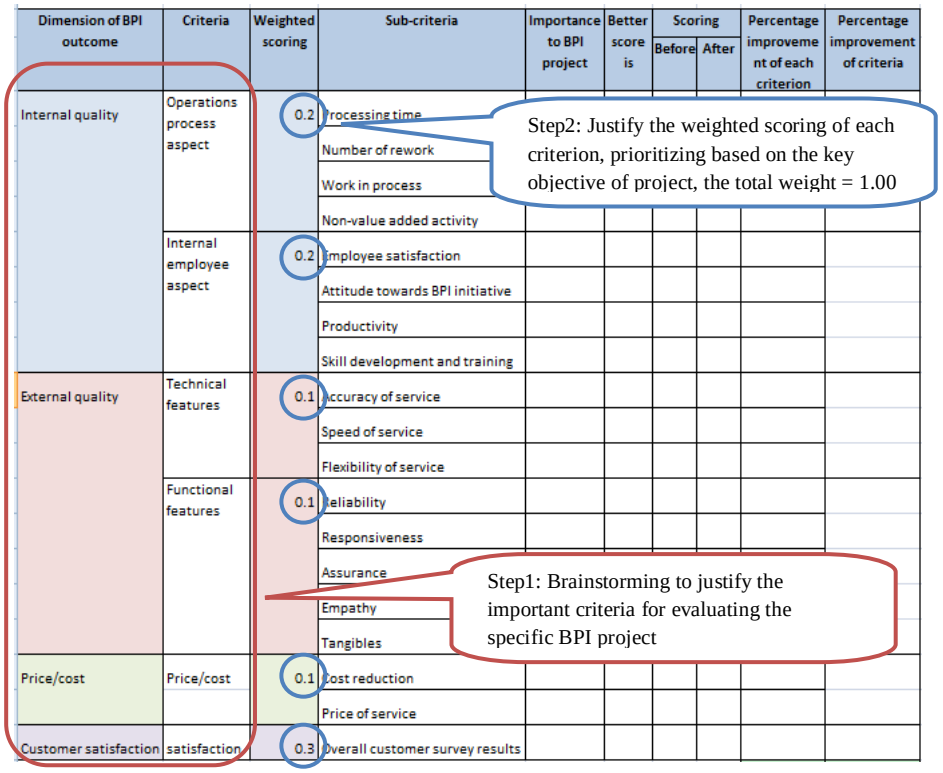


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Figure 6.5: BPI project evaluation guideline (step 1-2)

At ***step 2***, the total weighted scoring is 1.00. The weighted score given aims to reflect the importance of each criterion pertaining to the specific project. Each criterion can range from 0.00 to 1.00, the higher score representing the more important criteria. By assigning weighted scores the proposed evaluation framework reduces the problems pertaining to the characteristics of different projects. For example, if a BPI project mainly focused on improving internal operations, and is not at all concerned with the external quality dimension, stakeholders can give this dimension a score of 0.00.

According to Ittner *et al.* (2002), it is important that performance measures should be rated, based on aggregations of multiple indicators in relation to the target, rather than considering only an absolute scale. Therefore, criteria were divided into sub-criteria, aiming to reduce evaluator bias. At this step, the score should ideally be rated based on a team consensus, rather than depending on individual justification. Further details will be provided in the next step guideline.

6.3.3.2 Weighting the importance of BPI project outcomes

After the main criteria are reviewed as detailed above, project team members are responsible for identifying sub-criteria, related to the key measures used to assess the achievement of the project. The provisional sub-criteria proposed in the framework are guidelines. Nevertheless, brainstorming is essential in order to define all sub-criteria for a specific BPI project in ***step 3.*** After team agreement is reached, the next important step is to assign the *degree of importance* of each sub-criterion resulted from the project. At ***step 4***, the total score allocated to each sub-criterion under the same criterion is 1.00. As in step 2, users can also give a score of 0.00 to represent irrelevant criterion to the particular project.

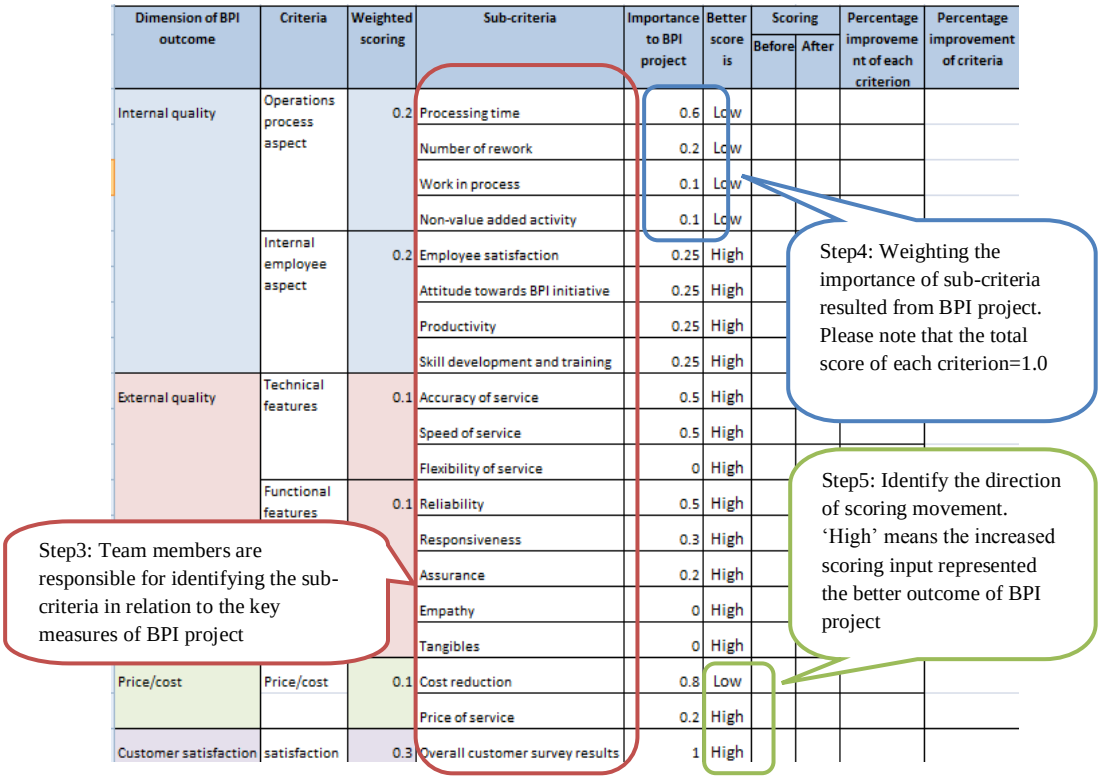


Figure 6.6: BPI project evaluation guideline (step 3-4-5)

Since a more desirable outcome of a project might result from either higher or lower scoring of each sub-criterion, it is important to justify the direction of the scoring movement. Thus, at ***step 5***, users were asked to identify the desired direction of the scoring movement of each sub-criterion, by choosing 'High' or 'Low' from the drop-down list. For instance, in the case where increased scoring means the better outcome resulting from the project, users have to select 'High' for calculation purposes in the next step.

6.3.3.3 Scoring the outcomes of BPI project

The outcomes of a BPI project can be measured by different approaches, making the project evaluation difficult to understand within the organisation. Therefore, the author decided to evaluate outcomes against the criteria by considering the 'percentage of improvement', rather than focusing on separate measures. This eliminates the problems caused by different measures and scoring systems of each sub-criterion. For example, if a project reduces processing time from five to three days. It means that the processing time can be improved by 40% resulting from the project. At the same time, if this project helped to reduce rework from 500 to 400 applications, this would be automatically calculated as 20% in the spreadsheet.

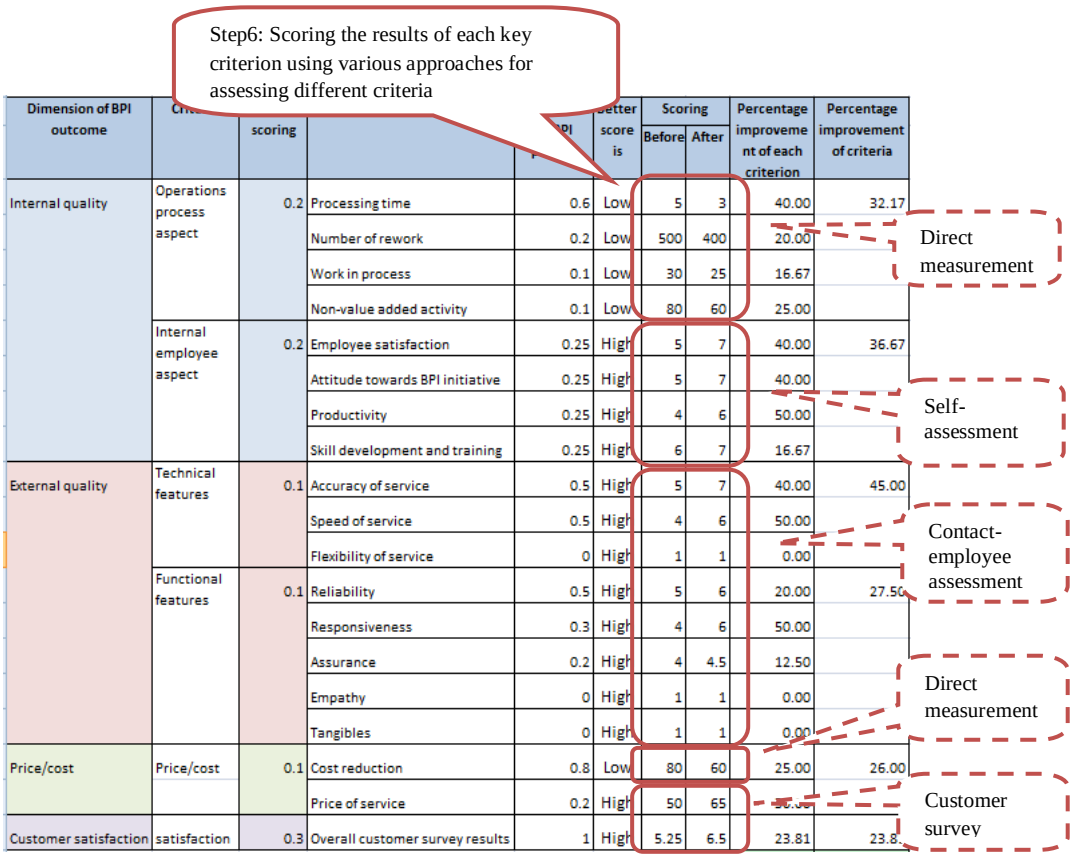
The underlying purpose of this scoring approach is to investigate the outcome of a BPI project by comparing 'before' and 'after' the adoption. Since the key measures of each group of criteria are different, various approaches and key informants were employed collaboratively for scoring in the evaluation spreadsheet, as summarised in Table 6.6.

Table 6.6: Summary of approaches used to evaluate each criterion of BPI project outcomes

Key measures	Assessment approach	Key informants responsibility
Operations process	Direct measurement	Project team members are responsible for inputting the score of each sub-criterion which resulted directly from the project.
Operations employee	Self-assessment (seven-point Likert scales)	Operations employees are responsible for assessing these criteria, before-after the BPI project adoption.
Technical features	Contact-employee assessment (seven-point Likert scales)	The contact employees are responsible to justify the score before and after BPI adoption, by observing from the customers' response.
Functional features		
Price	Direct measurement	Project team members are responsible for measuring the cost reduction criteria which resulted from BPI project.
Cost reduction		
Customer satisfaction	Customer survey (seven-point Likert scales)	Customers are surveyed pertaining to the overall satisfaction of service before and after BPI adoption.

Based on the research findings, the outcomes related to operations process and cost reduction can be measured directly. These criteria can be scored by the project team members, by assessing each criterion before and after implementation of the BPI project. For the operations employees, *self-assessment* was considered appropriate for assessing these outcomes from their perspectives.

As previously mentioned, customers cannot directly perceive that a better quality of service, related to technical and functional features, is a result of the BPI project. Consequently, customer-contact employees were considered appropriate for justifying the scoring before and after project adoption, by observing and reporting on the customer response during the service delivery process. This approach is supported by key literature suggesting that contact employees could be well placed to effectively judge the quality of service delivered to customers (Sergeant and Frenkel, 2000; Mukherjee and Malhotra, 2006), considering the high correlation between contact employees and customers found in several studies (Schneider and Bowen, 1985; Schneider *et al.*, 1980; Tornow and Wiley, 1991). The evaluation framework also considered the importance of understanding the outcomes of BPI project from customers' perspective. The *customer survey* is then used as the main approach for assessing customer satisfaction. At this point, self-assessment, contact-employees assessment and customer survey were measured based on seven-point Likert scales to standardise all the subjective criteria in this BPI project evaluation framework.



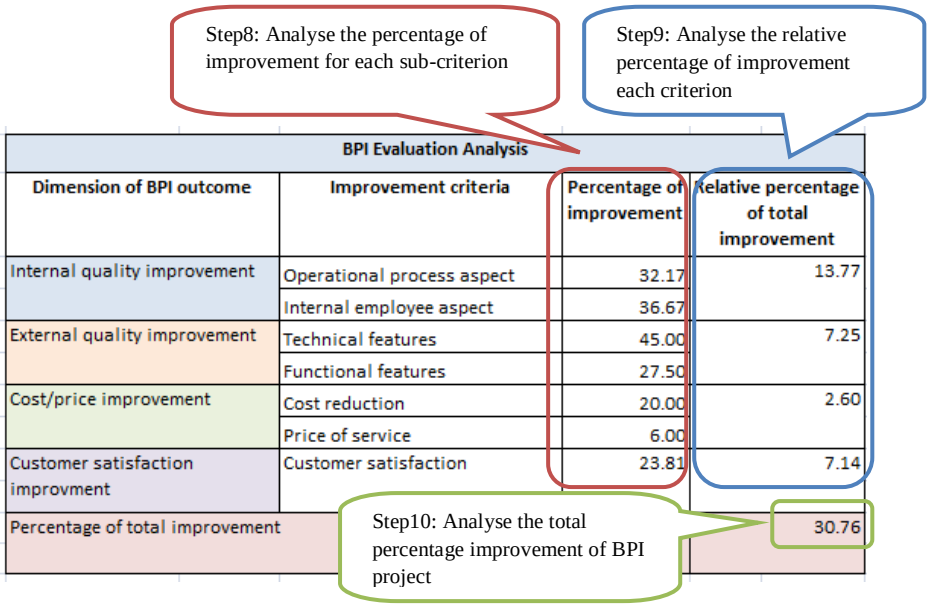
Dimension of BPI outcome	Criteria	scoring		BPI	Better score is	Scoring Before	Scoring After	Percentage improvement of each criterion	Percentage improvement of criteria
Internal quality	Operations process aspect	0.2	Processing time	0.6	Low	5	3	40.00	32.17
			Number of rework	0.2	Low	500	400	20.00	
			Work in process	0.1	Low	30	25	16.67	
			Non-value added activity	0.1	Low	80	60	25.00	
	Internal employee aspect	0.2	Employee satisfaction	0.25	High	5	7	40.00	36.67
			Attitude towards BPI initiative	0.25	High	5	7	40.00	
			Productivity	0.25	High	4	6	50.00	
			Skill development and training	0.25	High	6	7	16.67	
External quality	Technical features	0.1	Accuracy of service	0.5	High	5	7	40.00	45.00
			Speed of service	0.5	High	4	6	50.00	
			Flexibility of service	0	High	1	1	0.00	
	Functional features	0.1	Reliability	0.5	High	5	6	20.00	27.50
			Responsiveness	0.3	High	4	6	50.00	
			Assurance	0.2	High	4	4.5	12.50	
			Empathy	0	High	1	1	0.00	
			Tangibles	0	High	1	1	0.00	
Price/cost	Price/cost	0.1	Cost reduction	0.8	Low	80	60	25.00	26.00
			Price of service	0.2	High	50	65	30.00	
Customer satisfaction	satisfaction	0.3	Overall customer survey results	1	High	5.25	6.5	23.81	23.8

Figure 6.7: BPI project evaluation guideline (step 6-7)

After providing the score for all important criteria, ***at step 7***, the percentage improvement of each sub-criterion will be calculated and displayed utilising the pre-designed formulas developed in the MS excel spreadsheet. Summary of percentage of improvement by criteria is also calculated based on weighted-average method. This represents the average improvement percentage pertaining to each criterion defined in the first step.

6.3.3.4 Analysing the results from evaluation

The final step is to analyse the results from the BPI project evaluation framework. The percentage of improvement related to the sub-criteria was summarised and tabulated, then presenting in an easy-to-understand format (***step 8***). Additionally, the relative percentage of the total improvement of each dimension is also calculated to show the contribution to the overall percentage, of improvement resulting from the project (***step 9***). These results should help practitioners to understand to which criterion they need to pay more attention, to increase the overall improvement outcome as the ***final step***.



BPI Evaluation Analysis			
Dimension of BPI outcome	Improvement criteria	Percentage of improvement	Relative percentage of total improvement
Internal quality improvement	Operational process aspect	32.17	13.77
	Internal employee aspect	36.67	
External quality improvement	Technical features	45.00	7.25
	Functional features	27.50	
Cost/price improvement	Cost reduction	20.00	2.60
	Price of service	6.00	
Customer satisfaction improvment	Customer satisfaction	23.81	7.14
Percentage of total improvement			30.76

Figure 6.8: BPI project evaluation guideline (step 8-9-10)

The outcomes of the project are finally presented in a graphical format, using the radar plot chart to provide visual comparison with other BPI projects (Figure 6.9). This format can be used as a standard for benchmarking purposes in the future. The analysis results should provide practitioners with a multi-dimensional evaluation framework, which covers all the related criteria in the proposed theory model from Section 6.2.

Practitioners can easily understand the outcomes of the project in a particular focused dimension, as well as the total percentage of improvement resulting from the BPI project.

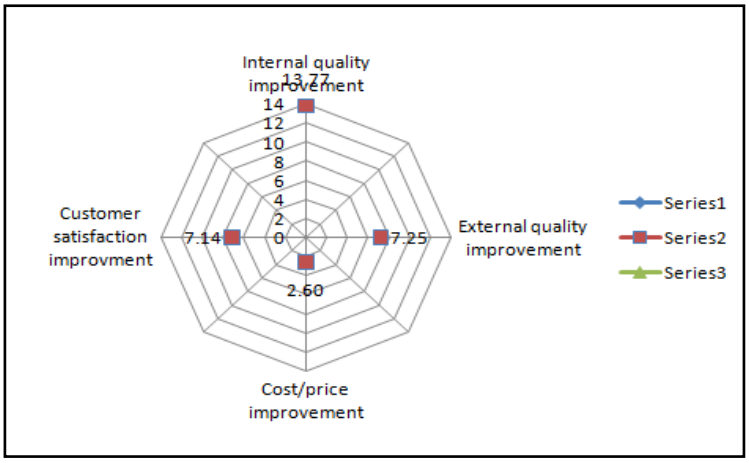


Figure 6.9: Summary of BPI project outcomes

6.4 CONCLUSION

In this final phase, the author revisited the case study companies focusing particularly on four important areas of financial services. Further empirical data was gathered from key groups of employees at different organisational levels to increase the reliability of results. Quantitative data was also obtained from practitioners and customers, as supporting evidence. As a result, four relationships were empirically established, which address the fourth research objective. These are:

- *Relationship 1 : The BPI initiative will help in improving the internal quality dimension*
- *Relationship 2 : The internal quality dimension is closely linked with the external quality dimension*
- *Relationship 3 : The internal quality dimension is closely linked with the cost/ price dimension perceived by customers*
- *Relationship 4: The external quality dimension and price are the key mediators of BPI methodology adoption as regards customer satisfaction*

These four main relationships were identified to characterise the outcomes of BPI adoption towards customer satisfaction. They aim to provide a firm foundation for the final theory model, through the establishing of internal validity as suggested by Eisenhardt (1989). Furthermore, they provided a good basis for developing the BPI evaluation framework, hence suggesting a potential use in practice. .

To pursue the final research objective, the BPI project evaluation framework was developed, based on the final theory model. Key ideas for developing an effective framework were synthesised from reflecting the theory model against the performance measurement literature. The practical rationale was also considered when proposing the framework. This aimed to provide practitioners with simple guidelines to assist in systematically assessing the outcomes of a BPI project. A step-by-step approach was also presented to help the practical application. This framework was, however, only developed to a prototype stage. Due to research time limitations, it was not possible to test and validate the evaluation framework. Therefore, this framework still needs development and refinement in future research studies.

CHAPTER 7
DISCUSSION AND CONCLUSIONS

The adoption of BPI approaches by financial institutions has been a worldwide theme in recent years, as these approaches have become mature, while competition and customer service expectations have developed. However, based on a review of the literature, there appeared to be no comprehensive theory extant, concerning the adoption of BPI in a financial services context. Hence, this research aimed to fill a significant research gap by exploring the existing phenomena of BPI adoption, in order to provide elements of theory and management guidelines to help evaluate BPI initiatives in practical applications. This final chapter discusses and summarises the knowledge achieved from this study, and identifies important areas for future research. Section 7.1 presents a summary of research findings from the four stages of this research. Section 7.2 discusses the purpose, context and content of the proposed theory model, comparing it specifically with two important service quality improvement models (the SPC and ROQ model); in order to clearly illustrate the contribution to knowledge in Section 7.3. The research limitations are discussed before proposing areas of future research in Section 7.4.

7.1 SUMMARY OF RESEARCH FINDINGS

The main outcome of this research is the development of a theory model that provides understanding of how BPI methodologies are adopted by financial institutions; to improve service quality and enhance customer satisfaction. The theory model also provided a constructive foundation for further development of a practical evaluation framework, assisting practitioners in assessing the outcomes of a BPI project systematically. To depict the entire research rationally, this section summarises the key findings based on four stages undertaken as follows:

7.1.1 Establishing the conceptual background (Preliminary phase)

The initial conceptual framework was primarily established from the extensive literature review in Chapter 2, hence addressing ***the first detailed objective.*** Aiming to fill

research gaps, service quality principles were incorporated into the framework to help understand the 'soft aspects' of BPI adoption (particularly the employee and customer perspectives) in the financial services. The Grönroos's service quality model was selected as being appropriate to understanding the impact of BPI initiatives, as perceived by customers. The initial conceptual framework was used to provide a well-defined focus in conducting the exploratory empirical case studies in the first phase. This framework was presented in Section 2.3.

7.1.2 Exploratory empirical case studies (Phase 1)

In this phase, ***the second detailed objective*** was addressed, to explain *'how financial institutions conducted BPI projects for improving service quality'*. Three main stages were clarified including: initiation, implementation, and measurement (evaluation). The important criteria, methods and techniques used, and common approach of each stage were described in Sections 4.5.1 to 4.5.3. The key findings suggested two issues concerned; an ineffective project evaluation framework; and less attention on soft aspects (e.g. employee, customer) in assessing the outcomes of the BPI project. These were considered critical for strengthening the theoretical foundation of BPI methodologies in the financial services context. Clearly, practitioners indicated the need in developing the practical evaluation framework for the BPI project. Accordingly, the first theory model was developed employing the empirical findings in the measurement stage of BPI projects in Section 4.5.3. Two elements of 'internal operations' and 'cost' dimensions were added to provide a comprehensive view of the theory model, as shown in Figure 4.8.

7.1.3 Theory refinement and validation (Phase 2)

The first theory model was refined and validated using experts' comments and suggestions. Three critical actions were prioritised and undertaken in this phase, providing key findings for developing the theory model. Firstly, both constructs of internal and customer dimensions were redefined, using the terms 'internal quality' and 'external quality' respectively. The definition and description of these two constructs were sharpened in the context of literature (Section 5.2). Secondly, the logical consequence in the model was validated, considering the view of business processes in financial services (organisational structure). Finally, the underlying concept of the

theory model was refined by bringing in the 'customer value' concept for integrating the external quality and cost (price) dimensions to explain the true value of BPI adoption outcomes towards customers (Section 5.4). Consequently, external quality and cost dimensions were justified as *key mediators for understanding the outcomes of the BPI initiative as perceived by customers*, achieving ***the third detailed objective.*** The second theory model was therefore proposed as the main outcome of this phase, illustrated in Figure 5.1.

7.1.4 Development of theory model (Phase 3)

Two main objectives of the final phase were: 1) to verify the emergent relationships in the theory model; and 2) to suggest a potential BPI project evaluation framework. Resulting from the case studies revisiting, four main relationships in the theory model were established and confirmed using empirical findings, as described in Sections 6.1.1 to 6.1.4, respectively. These results explained 'why' and 'how' each relationship existed in order to depict the *linkages of BPI adoption towards customer satisfaction*, addressing ***the fourth detailed objective***. Hence, the final theory model was proposed, as shown in Figure 6.3. At this point, the key findings suggested the importance of evaluating the outcomes of BPI initiatives towards customer perspective. This critical idea was in line with the scholarly literature of Kaplan and Norton (1996), Neely *et al.* (1995), Flynn *et al.* (1994), Dean and Bowen (1994), and Anderson *et al.* (1994b). The author, therefore, developed the BPI evaluation framework at the project-level, based on the criteria identified in the theory model ***(the fifth detailed objective)***. A good basis of performance measurement framework and the implication for the practitioner, as described in Sections 6.3.1 and 6.3.2, were considered in proposing the framework. The step-by-step guidelines were also provided for practitioners to assess the BPI project by means of an easy-to-use platform developed on an MS Excel spreadsheet (Section 6.3.3). It should be noted that the BPI evaluation framework was developed as a prototype, because of time limitations it is untested. This issue will be further discussed in Section 7.4.

To summarise, the main research question was addressed through the achievement of the five detailed research objectives described in Chapter 1. Table 7.1 below provides a summary of key evidence and findings pertaining to detailed research objectives.

Table 7.1: A summary of key evidence and findings

Chapter	Detailed research objectives	Key evidence and findings
Preliminary phase		
2	• To identify gaps from the literature, where it is necessary to augment the theoretical foundations of BPI adoption in the financial services context.	• Research gaps were clearly identified within and between two existing bodies of literature, related to BPI and service quality. • An initial conceptual framework was established to provide a preliminary concept of the linkages between BPI and customer satisfaction from the adoption and implementation perspectives, considering both TSQ and FSQ aspects of service quality.
Phase 1: The exploratory empirical study		
4	• To explore how financial institutions currently conduct BPI projects and interpret their impact on improving the quality of customer service.	• Nine BPI projects investigated from three case companies were followed the same adoption stages: initiation, implementation and evaluation. • The main BPI focus observed was on process efficiency and cost savings. • Importance of BPI methodology has typically reduced after the first adoption. • The senior executives paid less attention in understanding the outcomes of the BPI project from customer perspective. • The evaluation of BPI outcomes related to customer perspective was ineffective/ lack of systematic framework. • Practitioners indicated a need of systematic and constructive approach for evaluating the BPI project.

Chapter	Detailed research objectives	Key evidence and findings
Phase 2: Theory refinement and validation		
5	• To conceptualise, refine, and validate theory elements to be considered in understanding the linkages between BPI adoption and customer satisfaction.	• Differentiating between constructs of 'internal quality' and 'external quality' help to understand the outcomes of BPI adoption. • The logical consequence in the model was refined to understand the outcomes of BPI from end-to-end process, considering the organisational structure of financial services. • The 'external quality' and 'price' aspects were considered key mediators for understanding outcomes of BPI adoption, as perceived by customers. • Customer value concept was incorporated as a means to understand the true value of BPI initiative in financial services.
Phase 3: Development of theory model		
6	• To develop a theory model to explain BPI adoption in the financial services sector and in particular to: i) identify the linkages between BPI and customer satisfaction and ii) provide the basis for a project evaluation framework. • To suggest a potential BPI project evaluation framework for assessing BPI projects in the financial services.	• Four relationships have been empirically established, to increase the validity of the proposed theory model. • The soft aspects, related to employee and customer, were incorporated to understand the outcomes of BPI initiatives in the financial services context. • The theory model provided a good foundation for further development of the BPI evaluation framework. • The BPI evaluation framework and step-by-step guidelines were developed based on the criteria identified in the theory model, considering the multi- criteria in assessing the outcomes of BPI initiatives in the financial services context.

7.2 COMPARISON WITH EXISTING THEORY MODEL

In the previous section, key findings were summarised pertaining to the four research phases, explaining how the theory model was empirically developed throughout this study. In order to illustrate the contribution to knowledge, this section discusses the purpose, context and content of the proposed theory model, comparing it specifically with two important service quality improvement models (the SPC and ROQ model). This is important because the question arises, as to whether the proposed theory model is derivative of such existing models, or constitutes new knowledge.

- The *purpose* of the theory model was to explain the effects of a BPI adoption process on customer satisfaction, and to provide a basis for the evaluation of such a process. It was *not* intended to offer an explanation of the effects of improved service quality on broader aspects of the organisation, for example on employees or financial results. In this respect it differs from well-established service quality models such as the SPC and ROQ. Both SPC and ROQ provide a good foundation for understanding the cause-and-effect implications of service quality improvement. They place emphasis on understanding the business effects (i.e. revenue, market share, profitability) of improving customer-perceived quality, within a primarily marketing context. The author argues that both SPC and ROQ place little emphasis on the specific efforts (i.e. BPI initiatives and projects) that will help improve the efficiency of internal operations processes (see Rust *et al.*, 2002, p.8). The importance of the specific improvement initiative had not been specifically or adequately addressed in either the SPC of ROQ models. The author considered this a weakness for this purpose, because in most cases, it is through the adoption of specific initiatives and projects that service quality improvement actually takes place. Hence, the proposed theory model was primarily developed based on the effects of BPI adoption at the operational level (i.e. a BPI project). It could be considered that the theory model has a process-improvement focus; rather than having an organisational or marketing-orientation.

- The *context* of the proposed model is therefore that of the financial services organisation seeking to adopt (or having adopted to assess), specific BPI approaches at operational level, to improve services and service delivery. In this respect also it differs from the SPC and ROQ models which seek to present

generic high-level cause-and-effect relations at organisational level. The model was developed considering both service provider and customer perspectives. The focus and orientation of the SPC is towards human relations aspects and marketing issues. The internal operations process dimension (e.g., performance improvement, BPI adoption) is barely considered in the SPC model, with little attention paid to the significance of efficient operations systems for enhancing performance. The ROQ model considers cost reductions as well as revenues and market share, but this consideration is not at a detailed level, and the model does not aim to assist the manager who wished to introduce a specific BPI initiative. Neither of these models provides (or could provide) the basis for an evaluation framework, which was an important aspect of this research.

- The model ***content*** comprises the theory elements, overall model structure and the linkages between elements. The author's conception of the different purpose and context of the proposed model (see above) led him to set the existing models aside.

  Theory elements were thus empirically conceptualised and synthesised from the observed phenomena of BPI adoption in Thai financial services, not abstracted from models in the literature. The fact that some elements appear with similar names is unsurprising, and does not indicate derivation from existing models. Compared with the SPC model, the new model considers 'internal service quality', 'external service value' and 'customer satisfaction'. The apparent similarity is mainly in using the same words, but in a different context. Considering also the ROQ model, the proposed model elaborates on the issues of 'improvement effort', 'service quality improvement', 'perceived service quality and customer satisfaction', and 'cost reduction'.

  The structure of the theory model was conceptualised from first principles and refined using an end-to-end business process viewpoint. The decision to separate the outcomes measures pertaining to internal and external quality dimensions was supported by the organisational structure of financial services that is split between front and back office operations. In comparison the SPC is a conceptually straightforward linear framework that links service operations,

employee assessments and customer assessments to a firm's profitability and growth.

The linkages between the theory elements were given special attention in this research. Many theory diagrams use lines and/or arrows to indicate relationships and perhaps causation, often without a full investigation into the nature of the relationships. Whilst a number of authors have postulated strong links between improvement initiatives and outcome variables relating to customer satisfaction (see Section 2.1.6), relatively limited empirical research has provided a generic explanation of the relationship(s) and causal linkages between BPI and customer satisfaction. Rather than placing the emphasis on 'customer contact' process (i.e. service delivery), the author attempted to provide the empirically-supported linkages between BPI adoption and customer satisfaction, concerning particularly the outcomes of internal operations improvement process on customer perceived service quality and customer satisfaction; supporting the key findings of Kumar *et al.* (2008b), concerning BPM generally.

Overall, differences and additionality of the proposed theory model from existing models are clearly identified above, pertaining to the purpose, context and content. The contributions to knowledge are summarised in the next section.

7.3 CONTRIBUTION TO KNOWLEDGE

This research contributes to quality management knowledge, in particular to Business Process Improvement (BPI) methodology and service quality principles. Research contributions have been synthesised throughout this study, intending to fill literature gaps, as well as providing practitioners with guidance towards better practices. Much scholarly literature on BPI methodologies has focused on the manufacturing context. The academic research relating to BPI adoption in the financial services sector is limited. This research contributed towards filling this gap by exploring existing phenomena, to provide a better understanding of how financial institutions adopt BPI methodology for improving service quality. A new theory model was developed based on underlying service quality principles, to help explain the outcomes of BPI adoption at the operational level (i.e. BPI project) towards customer satisfaction. One important

aspect of the model was an attempt to understand the outcomes of BPI initiative pertaining to the 'soft' aspects (i.e. employee and customer perspectives), which was addressed as a key gap in the BPI literature.

Compared with existing theory models, the proposed model focuses on a smaller but more elaborate context: understanding the adoption/implementation of specific BPI initiatives for improving service quality in financial services (e.g. housing loan, credit card, branch, trade finance); rather than attempting to cover the big picture of service quality improvement in organisations. Indeed, the theory model can be considered complementary to both the SPC and ROQ frameworks that have been so influential in the literature, by adding more detailed issues and implications of specific service quality initiatives at the operational level. In addition, the customer value concept was incorporated to provide a necessary extension of the proposed model, in linking customers' evaluation of the received service with the internal operations process dimension. The key linkages between BPI adoption and customer satisfaction were defined in the theory model by the empirical study.

In practice, the proposed theory model should therefore provide a better understanding for managers in accurate targeting of the operations process to be improved, through BPI adoption. The model provides a constructive foundation for further development of operational evaluation, assisting practitioners to more systematically assess the outcomes of specific BPI initiatives at the project level. To illustrate the value and practicality of this aspect, an evaluation framework has been developed and presented in this thesis; the testing of which could be readily undertaken in future work.

7.4 LIMITATIONS AND AREAS FOR FUTURE RESEARCH

There were limitations to this research study which may have affected the reliability, comprehensiveness and generalisation of the theory model developed. In addition, the evaluation framework is subject to a further limitation.

Primarily for practical reasons, the case studies undertaken in this research were drawn from the Thai financial services sector. A related issue is that the number of financial institutions that have adopted BPI methodologies in Thailand is limited. Only three

companies were found, that were considered to be appropriate and feasible for the case studies. These limitations were considered to impact the potential generalisation of the final theory model, to cover all financial services in other country contexts. In relation to this, there might be issues of country context, especially differences of national culture, and possibly of financial service sector practices, which could impact the general applicability of the proposed model. Secondly, the resource limitations which are inevitable for an independent doctoral study were an important issue. The reliability, validity and comprehensiveness of the model might have been improved if more empirical data had been available. For example, the limited quantitative data obtained could only be used as supportive evidence, rather than providing key statistical results. Further, as Thailand is a newly-industrialised country, the number of experts in this area is still small. Hence, only ten expert interviews were conducted. Finally, the BPI evaluation framework was, inevitably, developed at a fairly late stage in the research programme, based on the final theory model. Owing to time constraints, it still requires testing and validation in a company setting. The evaluation framework was limited to the project-level, considering the restriction of company information. This evaluation framework might be extended for assessing BPI initiatives at a more strategic level at a future stage.

The limitations identified above suggested four important areas for future research. Firstly, further investigation of the BPI adoption in other countries and types of service industry would provide a more secure foundation for BPI theory in the service context. Secondly, the four service types, suggested by Schmenner (1986), would be a starting point from which to consider the criteria and dimensions for evaluating BPI initiative outcomes, aiming to generalise the theory model and make it more widely applicable to the service sector. Incorporation of other contextual aspects (e.g. national culture, economy, etc.) may also be considered to improve the generalisation of the model. Thirdly, because of the limitation of financial information access, a future study should widen the scope by further examining the outcomes of BPI initiatives, in terms of their impacts on the company's financial performance. This would provide important criteria specifically for evaluating the success of a BPI initiative in the organisation. Finally, further development, refinement, testing and validation of the proposed BPI project evaluation framework is required, by obtaining empirical data through more case studies, studying other types of service provision. This would provide practitioners with

an effective framework which could be applied to various BPI initiatives. In addition, the evaluation framework should be extended to assess the outcomes of a BPI initiative at a more strategic level, considering the links with an organisational performance measurement framework such as the balanced scorecard of Kaplan and Norton (1992). To summarise, the proposed theory model provides a basis for the further development of empirical work, both qualitative and quantitative, relating to BPI methodology adoption in the service context.

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APPENDIX 1: THE PRELIMINARY INVESTIGATION

This set of questions was developed for conducting the preliminary investigation, aiming at selecting and justifying appropriate cases to be studied. The interviews were carried out during December 2006 to January 2007. Details are described as follows:

Objective:

1) To explore the existing phenomenon of BPI adoption/implementation in Thai financial institutions.
2) To justify the feasibility for conducting case study research in Thai financial institutions (Case study selection).
3) To develop some ideas and questions that are worth pursuing in case studies (phase 1: exploratory empirical study)

The potential case companies:

There are four possible financial institutions in Thailand. One is the worldwide financial services company. Other three are private commercial banks, ranking in the top five financial institutions in Thailand. All of these financial institutions have experienced in adopting BPI methodologies, as the strategic improvement initiative.

Key informants:

Key informants are all in senior executive management positions, who responsible for monitoring and controlling the organisational strategy related to BPI/QI adoption.

Semi-structured interview questions:

Part I: Background and existing situation

1.1) What is the main objective to adopt BPI initiative in your organization?
1.2) What have you done related to the BPI or QI in your organization?
1.3) What are the existing BPI initiatives adopted and implemented?
1.4) What are the characteristics and structure of BPI team in your organization?
1.5) What are the trend and future of BPI in your organization?

Part II: Related issues of BPI adoption and implementation

2.1) Are there any differences of BPI adoption/ implementation in manufacturing and financial services?

If yes, please specify the reasons and examples.....

If no, please describe the reasons .....

2.2) What are the critical success factors of BPI adoption/implementation?

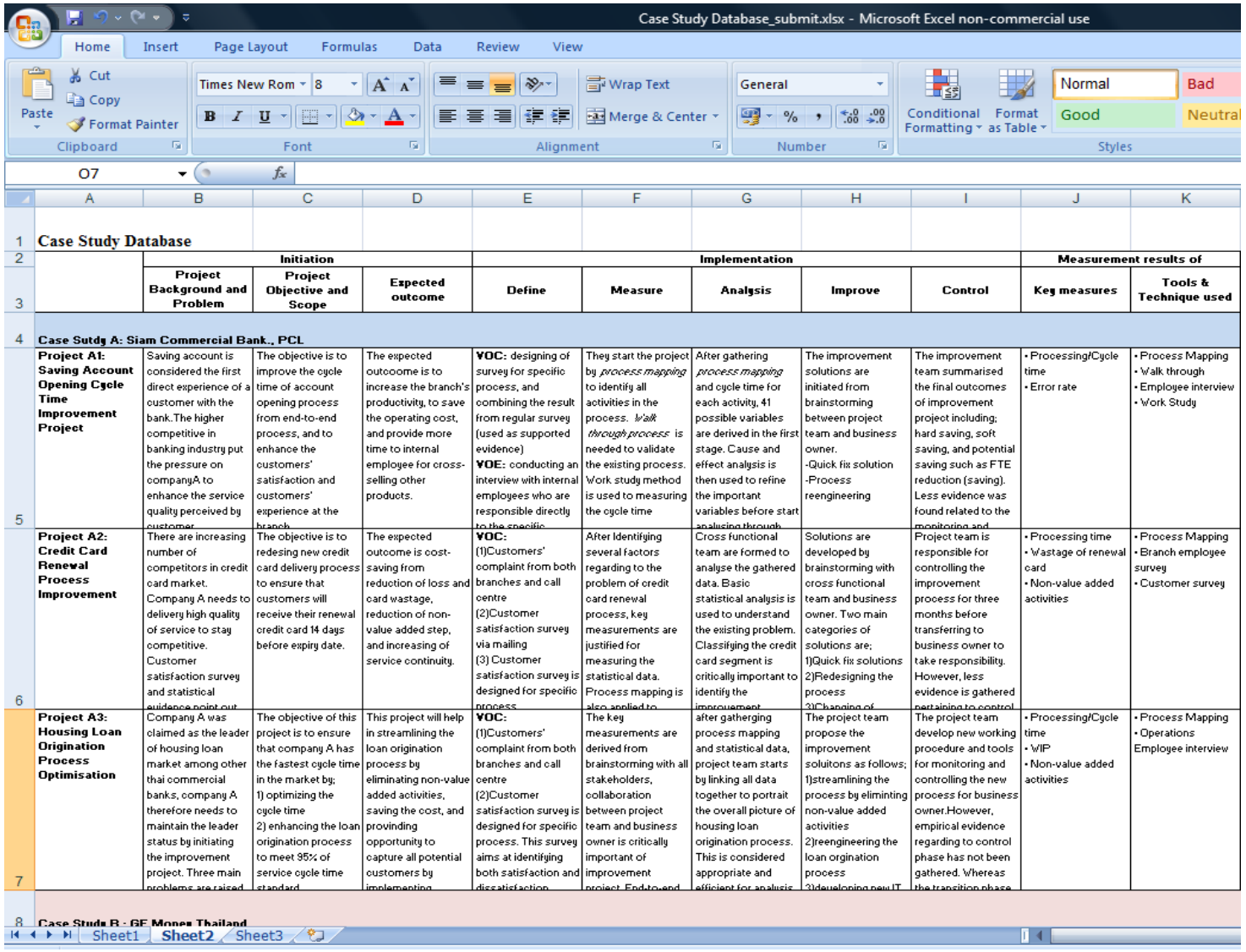
2.3) What are any concerned issues related to BPI adoption/ implementation? Please give the reasons.

Part III: Possibility for conducting the case study research

3.1) What is your expectation of BPI/QI adoption and implementation in your organisation?

3.2) What is your vision about adoption and implementation of BPI in your organization?

APPENDIX 2: CASE STUDY DATABASE (EXAMPLE)



Case Study Database

	Initiation			Implementation					Measurement results of	
	Project Background and Problem	**Project Objective and Scope**	**Expected outcome**	**Define**	**Measure**	**Analysis**	**Improve**	**Control**	**Key measures**	**Tools & Technique used**
Case Study A: Siam Commercial Bank., PCL										
Project A1: Saving Account Opening Cycle Time Improvement Project	Saving account is considered the first direct experience of a customer with the bank.The higher competitive in banking industry put the pressure on companyA to enhance the service quality perceived by customer	The objective is to improve the cycle time of account opening process from end-to-end process, and to enhance the customers' satisfaction and customers' experience at the branch	The expected outcoome is to increase the branch's productivity, to save the operating cost, and provide more time to internal employee for cross-selling other products.	**VOC:** designing of survey for specific process, and combining the result from regular survey (used as supported evidence) **VOE:** conducting an interview with internal employees who are responsible directly to the specific	They start the project by *process mapping* to identify all activities in the process. *Walk through process* is needed to validate the existing process. Work study method is used to measuring the cycle time	After gathering *process mapping* and cycle time for each activity, 41 possible variables are derived in the first stage. Cause and effect analysis is then used to refine the important variables before start analysing through	The improvement solutions are initiated from brainstorming between project team and business owner. -Quick fix solution -Process reengineering	The improvement team summarised the final outcomes of improvement project including; hard saving, soft saving, and potential saving such as FTE reduction (saving). Less evidence was found related to the monitoring and	• Processing/Cycle time • Error rate	• Process Mapping • Walk through • Employee interview • Work Study
Project A2: Credit Card Renewal Process Improvement	There are increasing number of competitors in credit card market. Company A needs to delivery high quality of service to stay competitive. Customer satisfaction survey and statistical evidence point out	The objective is to redesing new credit card delivery process to ensure that customers will receive their renewal credit card 14 days before expiry date.	The expected outcome is cost-saving from reduction of loss and card wastage, reduction of non-value added step, and increasing of service continuity.	**VOC:** (1)Customers' complaint from both branches and call centre (2)Customer satisfaction survey via mailing (3) Customer satisfaction survey is designed for specific process	After Identifying several factors regarding to the problem of credit card renewal process, key measurements are justified for measuring the statistical data. Process mapping is also applied to	Cross functional team are formed to analyse the gathered data. Basic statistical analysis is used to understand the existing problem. Classifying the credit card segment is critically important to identify the improvement	Solutions are developed by brainstorming with cross functional team and business owner. Two main categories of solutions are; 1)Quick fix solutions 2)Redesigning the process 3)Changing of	Project team is responsible for controlling the improvement process for three months before transferring to business owner to take responsibility. However, less evidence is gathered pertaining to control	• Processing time • Wastage of renewal card • Non-value added activities	• Process Mapping • Branch employee survey • Customer survey
Project A3: Housing Loan Origination Process Optimisation	Company A was claimed as the leader of housing loan market among other thai commercial banks, company A therefore needs to maintain the leader status by initiating the improvement project. Three main problems are raised	The objective of this project is to ensure that company A has the fastest cycle time in the market by; 1) optimizing the cycle time 2) enhancing the loan origination process to meet 95% of service cycle time standard	This project will help in streamlining the loan origination process by eliminating non-value added activities, saving the cost, and provinding opportunity to capture all potential customers by implementing	**VOC:** (1)Customers' complaint from both branches and call centre (2)Customer satisfaction survey is designed for specific process. This survey aims at identifying both satisfaction and dissatisfaction	The key measurements are derived from brainstorming with all stakeholders, collaboration between project team and business owner is critically important of improvement project. End-to-end	after gathering process mapping and statistical data, project team starts by linking all data together to portrait the overall picture of housing loan origination process. This is considered appropriate and efficient for analysis	The project team propose the improvement soluitons as follows; 1)streamlining the process by eliminting non-value added activities 2)reengineering the loan orgination process 3)developing new IT	The project team develop new working procedure and tools for monitoring and controlling the new process for business owner.However, empirical evidence regarding to control phase has not been gathered. Whereas the transition phase	• Processing/Cycle time • WIP • Non-value added activities	• Process Mapping • Operations Employee interview
Case Study B : GE Money Thailand										

APPENDIX 3: THE FIRST FIELDWORK PROTOCOL – PHASE 1

The first fieldwork

(Exploratory empirical case studies)

Introduction:

The objective of the first fieldwork is to investigate how financial institutions conduct Business process improvement (BPI) projects for improving the quality of services. This phase was undertaken during July and August, 2007. The protocol was developed as a guideline for conducting the fieldwork. It consists of two main sections: the fieldwork procedures and interview questions.

1. The fieldwork procedure

Procedures	Completeness	Remark
Determination of gaining an access • Prepare for gaining access (formal letter) • Contact case study company for permission		
Preparation to conduct fieldwork •Design case study questions •Contact key person at the case company •Forward the semi-structured question to key person •Preliminary enquiry about data availability		
Conduct a case study in the organization • Organise the first meeting to arrange the interview schedule • Investigate the general background of BPI adoption within the case company • Conduct the interviews on a face-to-face basis • Confirm the findings with respondents • Further enquiry will be sent via email (if required)		
Summary of data to be collected • Interviews • Documentation (e.g. annual report, project presentation, project summary, progress report, newsletter, etc.) •Archival records (e.g. statistical data, customer satisfaction index, survey data, etc.)		

2. Semi-structured interview questions (informants: improvement team leader/ internal consultant)

Part 1: General background of BPI project

1. What is the main objective of the improvement project?

……...

2. What are the major factors for initiating the improvement project?

……...

3. What are the criteria in selecting the BPI project to be implemented? Why do you consider them important?

……

4. How do you prioritise the BPI project? And is there any specific approach/ framework for prioritising the project to be implemented?

……...

5. How many groups of people are involved in the project?

……..

6. What are the key characteristics and structure of improvement team?

……

Part 2: The implementation of BPI project

7. How do you conduct the BPI project? Please describe the existing approach used in this project.

……

8. What are the methods, tools and techniques associated with each stage?

……

9. How do you measure the outcomes of the BPI project? And what are the key measures used in this project?

……

10. Are there any measures of project outcomes related to the customers' perspective?
    a) If yes, please specify how you measure them……..
    b) If no, please describe the reasons and constraints……
11. Are there any measures of project outcomes related to the employees' perspective?
    a) If yes, please specify how you measure them……..
    b) If no, please describe the reasons and constraints……
12. How do you justify the success of a BPI project? And what are the main criteria involved?

……..

Part 3: Suggestion and discussion

13. What are the key success factors of effective BPI implementation?

……

14. What are the problematic issues/ obstacles encountered during the project? How do you tackle those problems?

……

15. Do you have any suggestions that important for enhancing the effectiveness of BPI initiative within your organisation?

……

APPENDIX 4: THE SECOND FIELDWORK PROTOCOL – PHASE 2

The second fieldwork

(Expert interviews and case studies revisiting - 1)

Introduction:

Our proposition is to understand how BPI adoption could improve the overall service quality for enhancing customer satisfaction. Resulting from the case studies, the measurement of a BPI initiative focused mainly on the internal operations and cost dimensions; rather than considering the outcomes related to the customer dimension, which is the important criterion to assess the outcomes of a BPI initiative. Therefore, the main objective is to investigate the meaning insights, through the discussion on the proposed model as shown in Figure 1 below.

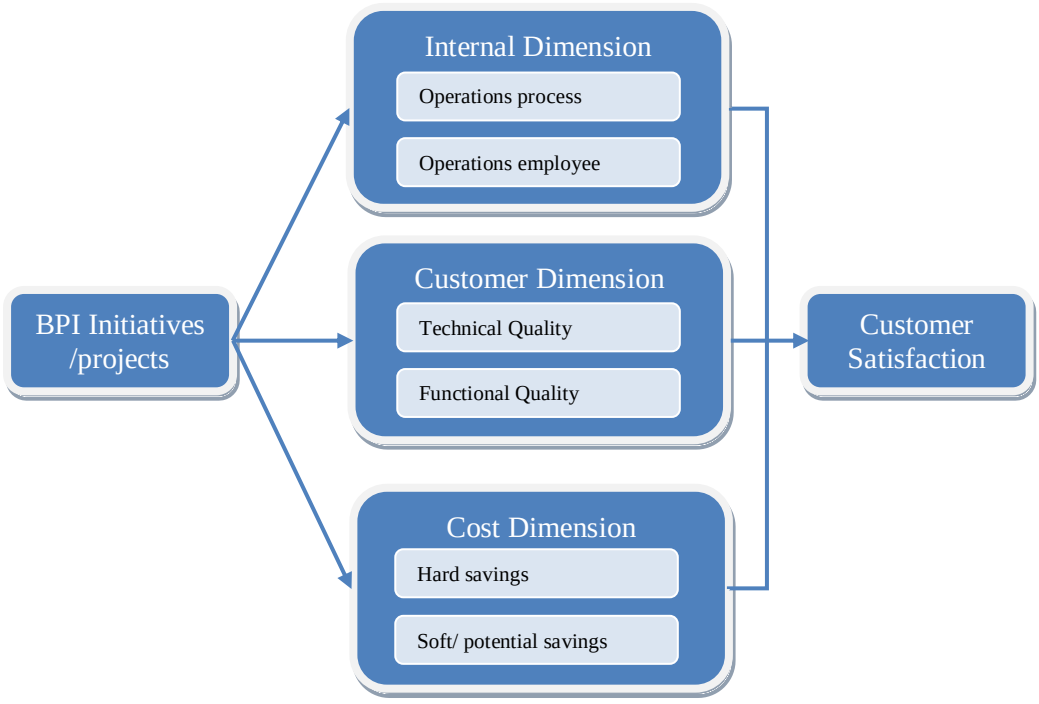
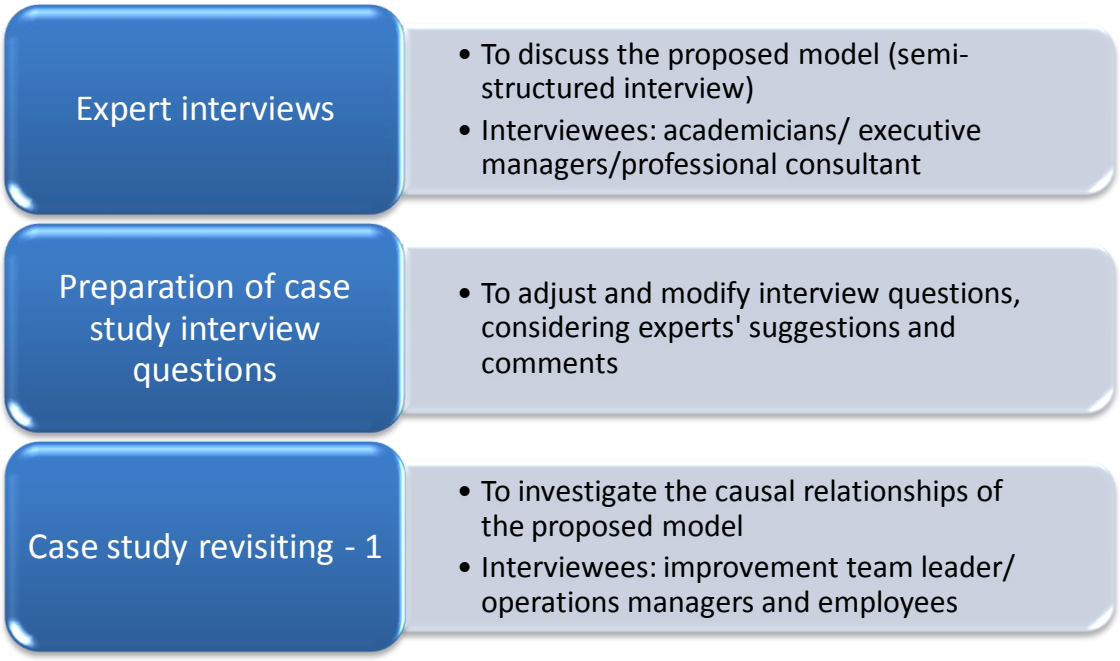


Figure 1: The proposed model

Fieldwork procedures (processes):

This procedure was developed as guidance for conducting the second fieldwork. It consists of two main stages: expert interview and case studies revisiting (1). This phase was undertaken during May and July 2008. It is noted that the data collected from case studies will be used in data analysis phase 3.



Two sets of questions were developed relevant to the fieldwork processes, presented as follows:

Section I: Expert interview (academician/ professional consultant/ senior executive)

Part 1: General Background

1. Details of the interviewees

Name: ……....
Institution: …….
Position: ……....
Area of research/expertise: ……...
Contact details (email): ……....

2. Existing business/ quality improvement initiatives expertise area

☐ Six Sigma ☐ Lean ☐ TQM ☐ BPR
☐ Others…….

3. Based on your perspective, what is the key objective for adopting the BPI/ QI initiatives?

Key Objective of BPI adoption	Priority	Strongly Disagree						Strongly Agree
		1	2	3	4	5	6	7
Improve service quality								
Enhance the organization competitiveness								
Cost reduction								
Enhance the customer satisfaction								
Improve the operating performance (improve process/working system)								
Improve the financial performance								
Quality building culture								
People development								
Others……								

4. What are the major factors for initiating the improvement project/ programme?

.....

5. What are the key drivers of improvement project? Please give example(s).

.....

6. What are the main barriers to the success of an improvement project? Please specify the reason(s).

.....

Part 2: <u>Discussion on the proposed model</u>

7. Based on the model, do you have any interesting views which should be considered to give a complete picture of BPI adoption for improving service quality? Please specify reasons and examples.

.....

8. Based on your experiences, how does the BPI initiative help to improve; internal, customer and cost dimensions? Please specify reasons.

.....

9. What are the key measures (criteria) which should be incorporated in the 'internal dimension'?

.....

10. What are the key measures (criteria) which should be incorporated in the 'external dimension'?

.....

11. What are other aspects those should be considered to improve the model, in order to understand how BPI initiative could enhance customer satisfaction?

.....

Part 3: <u>Further development and suggestions</u>

12. Do you think that it is important to measure the outcomes of the BPI initiative from the customer perspective?

If yes, please specify the reasons.....

If no, why do you think that it is not important?.....

13. How could we link the operations processes (internal) measures with customer perspective?

.....

14. Base on your experiences, what are your suggestions for developing the BPI evaluation framework? Please specify reasons.

.....

15. Do you have any comments and suggestions? Please specify.

.....

Section II: <u>Practitioner interview</u> (Improvement team leader/ operations managers and employees)

Part 1: <u>General Background</u>

1. Details of the interviewees

Name: ……....
Institution: …….
Position: ……....
Area of research/expertise: ……...
Contact details (email): ……....

2. Existing business/ quality improvement initiatives expertise area

☐ Six Sigma ☐ Lean ☐ TQM ☐ BPR
☐ Others…….

3. Based on your perspective, what is the key objective for adopting the BPI/ QI initiatives?

Key Objective of BPI adoption	**Priority**	**Strongly Disagree**						**Strongly Agree**
		1	**2**	**3**	**4**	**5**	**6**	**7**
Improve service quality								
Enhance the organization competitiveness								
Cost reduction								
Enhance the customer satisfaction								
Improve the operating performance (improve process/working system)								
Improve the financial performance								
Quality building culture								
People development								
Others……								

4. What are the major factors for initiating the improvement project/ programme?

.....

5. What are the key drivers of improvement project? Please give example(s).

.....

6. What are the main barriers to the success of an improvement project? Please specify the reason(s).

.....

Part 2: <u>Investigation of the causal link between BPI and service quality</u>

7. How does the internal quality improvement help to improve quality of service as perceived by customer (e.g. speed, responsiveness, reliability)? Please specify the reasons and examples.

.....

8. What are the key measures/criteria for evaluating the outcomes of BPI project?

.....

9. What are the key steps/approaches involved in evaluating of BPI project? (Evaluation process)

.....

10. What are strengths and weakness of existing approaches used for evaluating BPI project?

.....

11. Do you measure the outcomes of the BPI project related to the customer perspective?

11.1 If yes, how do you measure? And is there any evidence?.....

11.2 If no, what are the constraints and difficulties?.....

12. Do you think it is important to measure outcomes of the BPI linked to the customer perspective? Why and how important it is?

……..

Part 3: <u>Suggestions for developing the BPI evaluation framework</u>

13. What do you expect from the development of BPI evaluation framework?

.....

14. What are your suggestions for a practical evaluation framework of a BPI project?

- ☐ Systematic framework
- ☐ Step-by-Step guideline
- ☐ Computer-based support and evaluation system
- ☐ Collaborative system with performance-based evaluation
- ☐ Align with company balance scorecard
- ☐ Others……....

Part 4: <u>Further questions (customer satisfaction)</u>

16. Is there anything else about the BPI process that has helped customers or improved the customer's satisfaction?

.....

17. Is there anything that has reduced customers' satisfaction?

.....

18. Is there anything more that should be done to improve customers' satisfaction?

.....

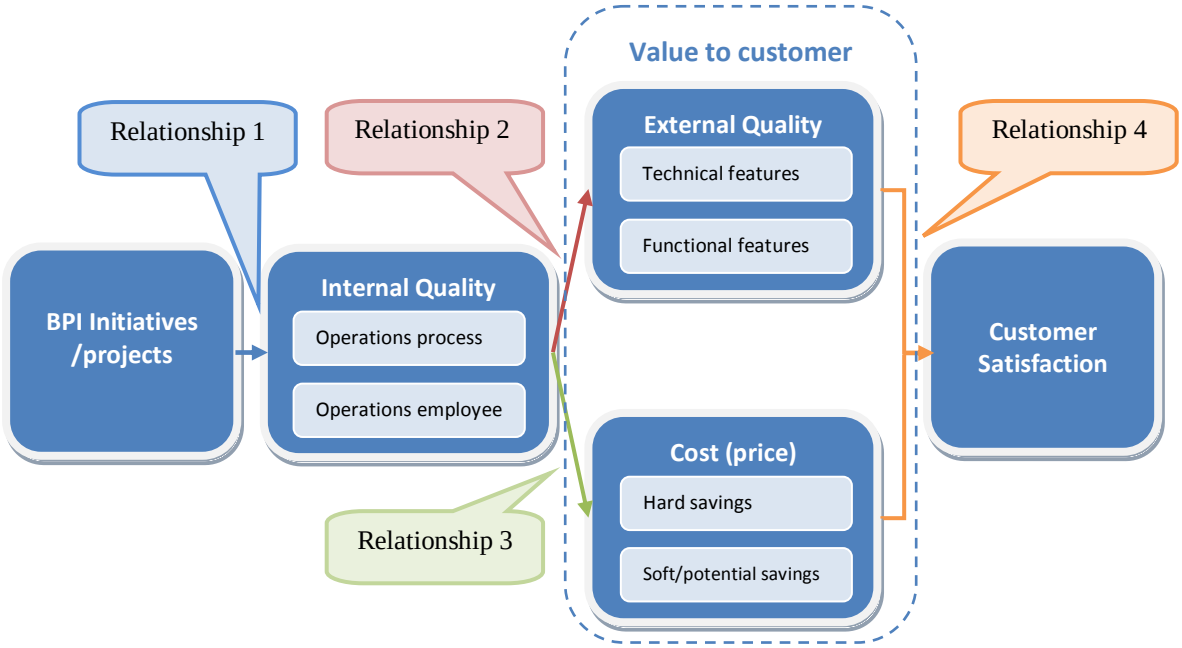
APPENDIX 5: THE THIRD FIELDWORK PROTOCOL – PHASE 3

The third fieldwork

(Case study revisiting – 2)

Introduction:

The objective is to verify the emergent relationships of the theory model. Four relationships were proposed as shown in Figure 1. In this phase, both semi-structured interview questions and questionnaires were used to gather empirical evidence.



Fieldwork procedures:

The fieldwork consists of four stages, summarised in Table 1 below. This fieldwork was undertaken during December 2008 to January 2009.

Fieldwork procedures	Objective	Informants	Completeness
Section 1	To verify the relationships in the theory model (based on four financial services)	• Senior executive • Operations manager	
Section 2	To understand the employees' perception and attitude towards BPI initiatives	• Branch manager • Contact – employees	
Section 3	To investigate the degree of relationships of the theory model	• Senior executive • Operations manager	
Section 4	To examine the criteria that affect customer satisfaction	• Customers in four financial services	

Section I: Practitioners' Interview (senior executive, operations manager)

Part 1: General Background

1. Details of the interviewees
   Name: ……....
   Institution: …….
   Position: ……....
   Area of research/expertise: ……...
   Contact details (email): ……....

2. Existing business/ quality improvement initiatives expertise area
   ☐ Six Sigma ☐ Lean ☐ TQM ☐ BPR
   ☐ Others…….

3. Characteristic of financial services
3.1 What are the key financial services of your department?
.....
3.2 Could you please provide the brief explanation of each financial service?
.....
3.3 What are the characteristics of you department structure? (Back office/ front office)
.....
3.4 What are the main sources of generated income/ profit? (Fee/ interest/ Charge)
.....
3.5 What are the key groups/characteristics of your customer?
.....
3.6 Do you have any relevant documents related to your service?
.....

Part 2: Investigation of the internal quality dimension

4. In term of internal operations processes, what are the key aspects that BPI initiative could help in improving the efficiency and service quality delivered to customers?
.....
5. In term of internal employees, what are the key aspects that BPI initiative could help in supporting and motivating your employees to provide a better service quality?
.....

Part 3: Investigation of the external quality dimension

6. Based on your "financial services/products", what are the key expectation and requirement of customers?
.....
7. In term of "service delivery", what are the key expectation and requirement of customers?
.....

Part 4: <u>Investigation of customer satisfaction dimension</u>

8. How do you measure the customer satisfaction? (Process of customer satisfaction identification, source of customer satisfaction)

.....

8.1 How do you gather customer satisfaction information?

.....

8.2 Could you provide the example of existing customer satisfaction information?

.....

9. What are the main sources of customer satisfaction information? (In-house survey? Market research survey?)

.....

10. Have you applied "Benchmarking" with other organisations to understand aspects of customer satisfaction?

.....

11. What are the key aspects those should be incorporated in customer satisfaction survey? (Are these reflecting on service quality dimension?)

.....

12. How do you evaluate and analyse your customer satisfaction?

.....

13. How do you use and utilise these customer satisfaction results?

.....

14. How do you link these results with internal operations processes perspective for improving the quality of service?

.....

15. Do you use these results for initiating any improvement initiatives?

15.1 If yes, how do you use these results? Please give an example

.....

15.2 If No, please give the reasons

.....

Section II: Questionnaire (branch manager, contact-employees)

The objective of questionnaire is to understand the contact-employee perception and attitude towards the BPI initiative.

1. How does BPI help improve efficiency and effectiveness of your operations processes? Please specify the reasons and examples.
   .....
2. Do you think the improvement of internal operations processes will impact the end customers? Please specify reasons and examples.
   .....
3. How do you perceive and evaluate whether customer perception and satisfaction is enhanced after the improvement initiatives?
   .....
4. Based on your opinion, please specify the importance of BPI initiative towards the following dimensions.

Quality Dimensions	Strongly Disagree						Strongly Agree
	1	2	3	4	5	6	7
Technical features of services							
Accuracy of services							
Speed of services							
Flexibility of services							
Reliability							
The improved operational processes could facilitate you to work as promised to customer							
The improved operational processes can help in handling customers' problem and providing service right at the first time							
The improved operational processes provides you the way to work by a certain time with error-free record							
Responsiveness							
The improved operational processes help you to justify in when service will be performed to customer with a prompt service							
The improved operational processes can help you to increase the willing to help customer							
The improved operational processes can help you to increase the responsiveness to customer request							
Assurance							
A1.The improved operational processes will improve the instil confidence to your customer.							
A2. The improved operational processes can help you to provide safe transaction to customer.							
A3+A4 The improved operational processes can help you to improve or increase consistency courteousness to your customer, and provide you a knowledge to answer customers' questions (more understand in your working process)							
Empathy							
The improved operational processes can help you to pay attention to individual customer.							
The improved operational processes will help you to consider customer at heart and to understand the specific needs of your customer							
The improved operational processes will help in improving a convenient operating hour to your customer, and increasing more attention to your customers.							
Tangibles							
After implementation of Improvement initiatives, your organization has modern looking equipment. The physical facilities, and the materials associated with the service (such as contract, statements) are visually improved.							
After implementation of Improvement initiatives, customer contact employees have more neat appearance.							

Section III: The relationship investigation matrix (senior executive, operations manager)

Objective: This matrix is developed for investigating the degree of relationship between internal quality and external quality dimension.

Instruction: Please identify the score of each relationship based on your perspective and experience. Give score definitions are provided below.

The causal relationship investigation matrix

				Internal Quality							
				Internal Operations Process				Internal employee			
				Processing time	Work in process	Number of rework	Non-value added / wastes	Job Satisfaction	Attitude towards BPI	Productivity	Skill development/ training
External Quality	Technical features	Accuracy of service									
		Speed of service									
		Flexibility of service									
	Functional Features	Reliability									
		Responsiveness									
		Assurance									
		Empathy									
		Tangibles									
Price											

Score Definition

Score 3 represents the very strong relationship

Score 2 represents the strong relationship

Score 1 represents the weak relationship

Score 0 represents that there is no relationship

Section IV: Questionnaire (customers)

Objective:

1. To investigate the importance of each service quality dimension towards customers' perspective
2. The gathered information will be used in conjunction with developed matrix

Instruction:

Based on your experience, how would you rate the importance of service quality provided by bank as the following areas?

Service Quality Dimensions	Strongly Disagree						Strongly Agree
	1	2	3	4	5	6	7
Technical features							
Accuracy of service product (accuracy of loan contract, information)							
Speed of service product (loan approval period)							
Flexibility of service product (customise to suit the need)							
Reliability							
Provide service as promised (e.g. loan approval on time, call back as promised)							
Keep informing the change and progress of your service and transactions							
Provide accurate service (right at the first time) with error-free transaction							
Able to handle your questions and problem							
Responsiveness							
Willing to help and to provide service							
Response to your request							
Provide prompt service (speed and efficiency)							
Available to answer your questions							
Assurance							
Provide safe and confident transaction							
Ability and knowledge to answer your enquiries							
Politeness of courteousness of staffs (consistency)							
Trustworthiness and confidentiality							
Empathy							
Attentiveness to your banking needs							
Recognise you at first priority							
Available to help and answer your questions							
Friendliness and caring							
Tangibles							
Attractive facilities (Appearance, convenient, cleanliness, tidy)							
Modern-looking equipment (e.g. automated machine, ATM)							
The neat appearance of customer contact staff							
Document and material associated with service (contract, statement)							
Price of service							
Fee/ Charge per transaction							
Interest rate compared with other banks							

APPENDIX 6: LIST OF INTERVIEWEES

Reference Code: The interviewees are coded pertaining to the different 'category' and 'case company'.

For example: EA1 refers to the senior executive **(E)**, at company A **(A)**, no. **1**

CA3 refers to the improvement team leader/ consultant **(C)**, at company A **(A)**, no. **3**

E1 refers to the expert **(E)**, no.**1**

OA1 refers to the operations manager **(O)** at company A **(A)**, no. **1**

SA1 refers to the operations employee/ staff **(S)** at company A **(A)**, no.**1**

Preliminary Investigation Phase (Dec 2006 - Jan 2007)

Ref. Code	Interviewee	Position	Organisation	Category	Date of Interview
EA1	Mr Suriya Lertwattanapongchai	Senior Vice President, Six Sigma Change Programme Management Office	Company A	Senior Executive Management	15 Jan 2007
EB1	Ms Suwanna Jakraworavudh	Country Quality Leader	Company B	Senior Executive Management	03 Jan 2007
EC1	Mr Ampol Polohakul	Executive Vice President	Company C	Senior Executive Management	22 Dec 2006
CA3	Ms Sirintip Junsawad	Assistant Vice President, Six Sigma Change Programme Management Office	Company A	Improvement Team Leader/ Internal Consultant	18 Jan 2007

Phase I: The Exploratory Empirical Study (July 2007- August 2007)

Ref. Code	Interviewee	Position	Organisation	Category	Date of Interview
EA1	Mr Suriya Lertwattanapongchai	Senior Vice President, Six Sigma Change Programme Management Office	Company A	Senior Executive Management	20 July 2007 24 July 2007 28 August 2007
CA1	Ms Nid	Assistant Vice President, Six Sigma Change Programme Management Office	Company A	Improvement Team Leader/ Internal Consultant	27 July 2007
CA2	Ms Yaowalak Pothong	Assistant Vice President, Six Sigma Change Programme Management Office	Company A	Improvement Team Leader/ Internal Consultant	15 August 2007
CA3	Ms Sirintip Junsawad	Assistant Vice President, Six Sigma Change Programme Management Office	Company A	Improvement Team Leader/ Internal Consultant	13 July 2007 28 August 2007
EB1	Ms Suwanna Jakraworavudh	Country Quality Leader	Company B	Senior Executive Management	8 August 2007
CB1	Anonymous	Master Black Belt	Company B	Improvement Team Leader/ Internal Consultant	10 August 2007
CB2	Anonymous	Master Black Belt	Company B	Improvement Team Leader/ Internal Consultant	10 August 2007
EC1	Mr Ampol Polohakul	Executive Vice President	Company C	Senior Executive Management	28 August 2007
CC1	Ms Danaya Chantanalerdvilai	Senior Manager, Branch Channel	Company C	Improvement Team Leader/ Internal Consultant	30 August 2007
CC2	Ms.Naruwan Luepromchai	Assistant Vice President, Process Development Department	Company C	Improvement Team Leader/ Internal Consultant	30 August 2007

Phase II: Expert interviews (May-July 2008)

Ref. Code	Interviewee	Position	Organisation	Category	Date of Interview
E1	Dr Preeprem Nontaleelak	Dean of Accounting Dept.	Durakit Bundit University	Academic/ Consultant	17 May 2008
E2	Mr Kiatkajorn Komanasin	Productivity Consultant	Thailand Productivity Institute	Consultant	22 May 2008
E3	Dr Thananya Wasusri	Assistant Professor	King Mongkut's University of Technology Thonburi	Academic	23 May 2008
E4	Dr Tartat Mokkhamakkul	Senior Lecturer	Operations Management Dept. , Chulalongkorn University	Academic	26 May 2008
E5	Dr Duangpan **Krichchanchai**	Assistant Professor	Mahidol University	Academic	27 May 2008
E6	Mr Peter Walker	Partner	Grant Thornton, Thailand	Consultant	03 June 2008
E7	Dr Piyawat **Jirapongsuwan**	Vice President, Process Development Department	Kasikorn Bank PCL	Senior Internal consultant/Academic	05 June 2008
E8	Dr Chatchalee Ruktanonchai	Coordinator, Evaluation Division	National Science and Technology Development Agency	Executive Management	June-04-2008
E9	Dr Ladawan Krasachol	Senior Director, Evaluation Division	National Science and Technology Development Agency	Executive Management /Academic	June-25-2008
E10	Mr Samard Hongvilai	Asst Senior Vice President Research and Information Services Department	Government Housing Bank	Executive Management /Academic	July-2-2008

Phase II: Case study revisiting 1- Company A

Ref. code	Interviewee	Position	Organisation	Category	Date of Interview
CA3	Ms Sirintip Junsawad	Assistant Vice President, Six Sigma Change Programme Management Office	Company A	Improvement Team Leader/ Internal Consultant	June-09-2008
CA4	Mr Dong	Assistant Vice President, Six Sigma Change Programme Management Office	Company A	Improvement Team Leader/ Internal Consultant	June-09-2008
CA5	Mr Prinya	Assistant Vice President, Six Sigma Change Programme Management Office	Company A	Improvement Team Leader/ Internal Consultant	June-09-2008
CA2	Ms Yaowalak Pothong	Assistant Vice President, Six Sigma Change Programme Management Office	Company A	Improvement Team Leader/ Internal Consultant	June-17-2008
CA1	Ms Nid	Assistant Vice President, Six Sigma Change Programme Management Office	Company A	Improvement Team Leader/ Internal Consultant	June-17-2008
OA1	Mr Sa-Ngiam Bangsaruntip	Vice President Manager, Business Banking Operations	Company A	Operations Management	July-04-2008
OA2	Mr Manu Suthiphong	Branch Manager, Chidlom Branch	Company A	Operations Management	July-04-2008
SA1	Ms Onnicha Chamraschareon	Asst Branch Manager, Chidlom Branch	Company A	Operations Staff	July-04-2008
SA2	Ms Walaluck	Asst Branch Manager, Chidlom Branch	Company A	Operations Staff	July-04-2008
SA3	Ms Goi	Asst Branch Manager, Head Quarter Branch	Company A	Operations Staff	June-19-2008

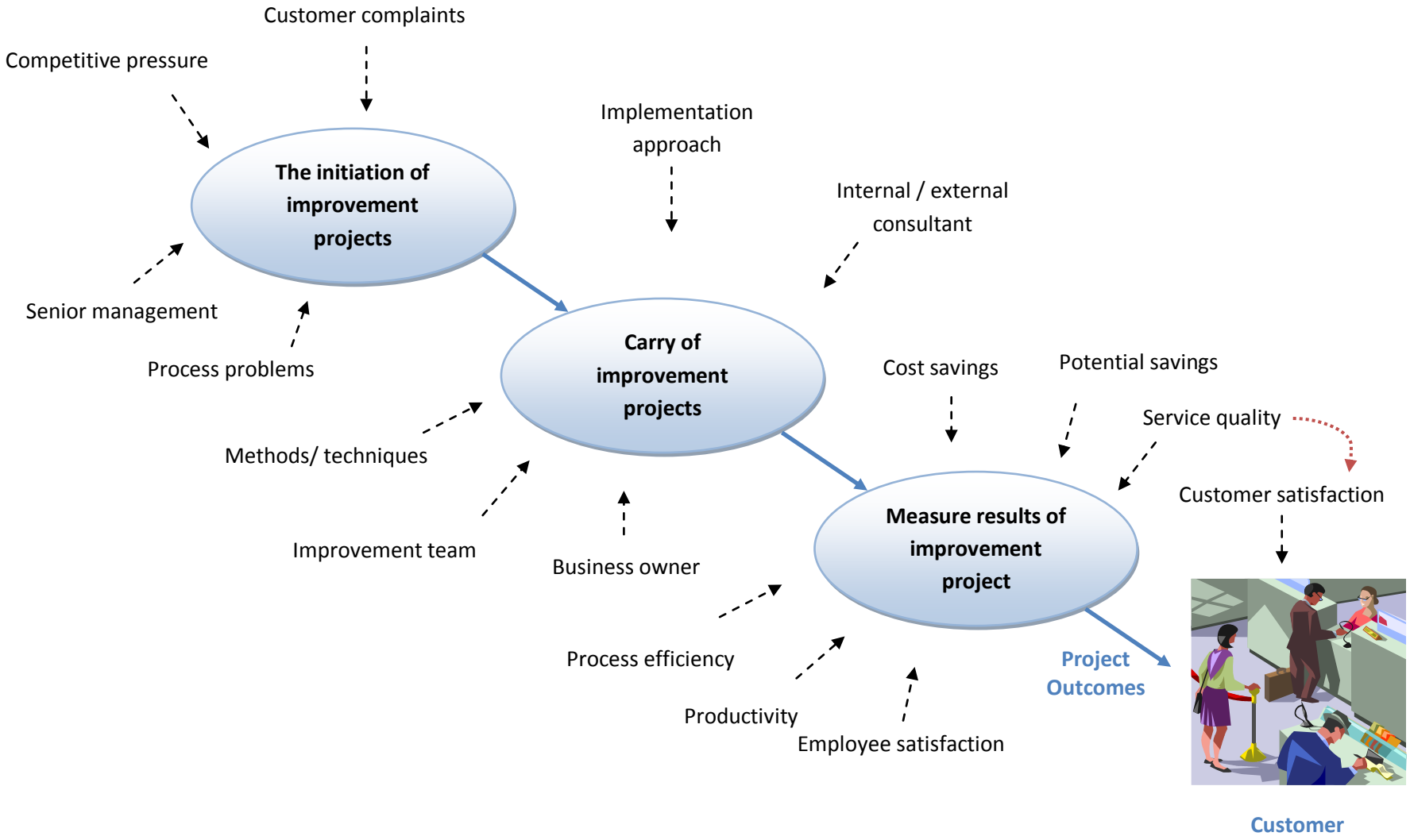
Phase II: Case study revisiting 1- Company C

Ref. Code	Interviewee	Position	Organisation	Category	Date of Interview
E7	Dr Piyawat **Jirapongsuwan**	Vice President of Process Development Department	Company C	Improvement Team Leader/ Internal Consultant	June-13-2008
CC3	Dr Moo	Senior Manager, Process Development Department	Company C	Improvement Team Leader/ Internal Consultant	June-09-2008
CC1	Ms Danaya Chantanalerdvilai	Senior Manager, Branch Channel	Company C	Improvement Team Leader/ Internal Consultant	June-20-2008
CC2	Ms.Naruwan Luepromchai	Asst. Vice President of Process Development Department	Company C	Improvement Team Leader/ Internal Consultant	July-09-2008
EC5	Mr.Kittipan Jamprawit	First Vice President of International Trade Department	Company C	Executive Management	July-08-2008
OC1	Mr Boonchai	Unit Manager, International Trade Department	Company C	Operations Management	July-15-2008
OC2	Ms Lek	Unit Manager, International Trade Department	Company C	Operations Management	July-15-2008
OC3	Mr Autt	Spoke Manager, International Trade Department	Company C	Operations Management	July-15-2008
SC1	Mr Joe	Officer, International Trade Department	Company C	Operations Staff	July-15-2008
SC2	Mr Nuu	Officer, International Trade Department	Company C	Operations Staff	July-15-2008

Phase III: Case Studies revisiting through four financial services (December 2008 – January 2009)

Ref. Code	Interviewee	Position	Organisation	Category	Date of Interview
EC2	Mr.Kamphon Sutthiphichet	First vice president of Consumer Loans Product Management and Marketing Department	Company C	Executive Management	Dec-16-2008
EC3	Mr.Nathapol Luepromchai	First vice president of Credit Card Product Management and Marketing Department	Company C	Executive Management	Dec-16-2008
EC4	Mr.Nimit Polchai	First Vice President of Consumer Credit Product Operation Department	Company C	Executive Management	Jan-7-2009
EC5	Mr.Kittipan Jamprawit	First Vice President of International Trade Department	Company C	Executive Management	Jan-7-2009
OC4	Mr.Saravudh Esariyakunanon	Assistant Vice President of International Trade Department	Company C	Operations Management	Jan-7-2009
EA2	Mr.Somnuek Siriwan	Asst. Vice President of Branch call centre, procedures and Standards	Company A	Executive Management	Jan-15-2009
EA3	Mrs.Sureporn Tancharoon	Asst. Vice President of Standard Operating Procedures	Company A	Executive Management	Jan-15-2009
E7	Dr. Piyawat Jirapongsuwan	Vice President of Process Development Department	Company C	Senior Improvement Team Leader/ Internal Consultant	Jan-6-2009
CC2	Ms.Naruwan Luepromchai	Asst. Vice President of Process Development Department	Company C	Improvement Team Leader/ Internal Consultant	Jan-6-2009

APPENDIX 7: CONCEPTUAL DIAGRAM - HOW FINANCIAL INSTITUTIONS CONDUCT IMPROVEMENT PROJECTS



APPENDIX 8: KEY LITERATURE – INTERNAL AND EXTERNAL QUALITY

Internal quality dimension	External quality dimension	Key literature
• Internal conformance	• External conformance	Juran (1974)
• Internal service quality • Employee satisfaction • Employee productivity	• External service value • Customer satisfaction	Heskett *et al.* (1994)
• Internal focus: conformance of operations process specification (time, rework, WIP) • Internal employees' needs must be met • Internal efficiency	• External focus : both objective and subjective measures are included to understand how customer perceived quality of service delivered • External effectiveness	Reeves and Bednar (1994)
• Efficiency	• Effectiveness	Bowen and Ford (2002)
• Internal dimension mainly focused on people and process	• External dimension is related to both customers, and competitors	Detert and Schroeder (2000)
• Quality performance resulted from BPI/QI initiative including time, cost, flexibility etc.	• Customer perception of quality performance resulted from BPI/QI initiative • This dimension has been found understudied, and needs further empirical study	Flynn *et al.* (1994)

APPENDIX 9: BRANCH MANAGER SURVEY RESULTS

External Quality Dimension	BM 001	BM 002	BM 003	BM 004	BM 005	BM 006	BM 007	BM 008	BM 009	BM 010	BM 011	BM 012	BM 013	BM 014	BM 015	AVG	STD	Total AVG	Total STD
Technical Features of service																			
Accuracy of service	6	7	6	6	7	6	7	7	6	7	7	7	7	7	6	6.60	0.51		
Speed of service	7	7	6	6	7	7	7	6	6	7	7	7	6	7	7	6.67	0.49		
Flexibility of service	6	6	5	6	7	6	6	6	6	7	7	7	5	6	6	6.13	0.64		
Reliability																			
R1. The **improved operational process** could facilitate you to work as promised to customer	6	5	6	6	7	5	6	6	6	7	7	6	4	7	7	6.07	0.88		
R2+R3 The **improved operational process** can help in handling customers' problem and providing service right at the first time	6	5	5	5	7	5	7	6	6	7	7	6	5	6	7	6.00	0.85		
R4+R5 The **improved operational process** provides you the way to work by a certain time with error-free record	6	5	6	5	7	6	6	6	6	7	6	6	4	7	7	6.00	0.85	6.02	0.84
Responsiveness																			
RS1+RS2 The **improved operational process** help you to justify in when service will be performed to customer with a prompt service	5	5	4	6	7	5	7	6	6	6	6	7	4	6	6	5.73	0.96		
RS3. The **improved operational process** can help you to increase the willing to help customer	6	5	3	6	7	6	7	6	6	6	7	6	5	6	6	5.87	0.99		
RS4. The **improved operational process** can help you to increase the responsiveness to customer request	6	5	3	6	7	5	7	6	6	6	7	6	5	6	6	5.80	1.01	5.80	0.97
Assurance																			
A1.The **improved operational process** will improve the instill confidence to your customer.	7	5	3	6	7	5	6	6	6	6	7	6	6	6	6	5.87	0.99		
A2. The **improved operational process** can help you to provide safe transaction to customer.	6	5	3	6	7	5	6	6	6	6	7	6	6	7	7	5.93	1.03		
A3+A4 The **improved operational process** can help you to improve or increase consistency courteousness to your customer, and provide you a knowleadge to answer customers' questions (more understand in your working process)	6	5	2	6	7	6	6	6	6	5	7	6	7	6	6	5.80	1.21	5.87	1.06

External Quality Dimension	BM 001	BM 002	BM 003	BM 004	BM 005	BM 006	BM 007	BM 008	BM 009	BM 010	BM 011	BM 012	BM 013	BM 014	BM 015	AVG	STD	Total AVG	Total STD
Empathy																			
E1. The **improved operational process** can help you to pay attention to individual customer.	7	5	2	6	7	6	6	6	4	6	7	7	7	6	6	5.87	1.36		
E4+E5 The **improved operational process** will help you to consider customer at heart and to understand the specific needs of your customer	7	5	3	6	7	5	6	6	4	6	7	7	6	5	6	5.73	1.16		
E2+E3 The **improved operational process** will help in improving a convenient operating hour to your customer, and increasing more attention to your customers.	5	5	2	6	7	6	6	6	4	5	6	7	4	6	6	5.40	1.30	5.67	1.26
Tangibles																			
T1+T2+T4 After **implementation of Improvement initiatives**, your organization has modern looking equipment. The physical facilities, and the materials associated with the service (such as contract, statements) are are visually improved.	6	5	2	6	7	6	7	6	6	6	7	6	7	4	5	5.73	1.33		
T3. After **implementation of Improvement initiatives**, customer contact employees have more neat appearance.	6	5	2	6	7	5	7	6	6	6	6	6	6	2	3	5.27	1.62	5.50	1.48

APPENDIX 10: CONTACT-EMPLOYEES SURVEY RESULTS

External Quality Dimension	OP 001	OP 002	OP 003	OP 004	OP 005	OP 006	OP 007	OP 008	OP 009	OP 010	OP 011	OP 012	OP 013	OP 014	OP 015	AVG	STD	Total AVG	Total STD
Technical Features of service																			
Accuracy of service	7	7	6	6	7	6	6	7	7	6	7	6	7	6	7	6.53	0.52		
Speed of service	6	7	6	6	7	7	6	7	7	6	7	6	7	6	7	6.53	0.52		
Flexibility of service	4	7	5	6	6	6	6	6	7	6	6	6	7	6	6	6.00	0.76	6.36	0.65
Reliability																			
R1. The **improved operational process** could facilitate you to work as promised to customer	2	7	5	6	5	6	5	5	7	7	7	6	7	7	6	5.87	1.36		
R2+R3 The **improved operational process** can help in handling customers' problem and providing service right at the first time	2	7	5	6	6	6	6	6	7	7	6	6	6	7	6	5.93	1.22		
R4+R5 The **improved operational process** provides you the way to work by a certain time with error-free record	4	7	5	6	6	6	6	6	7	7	6	6	6	7	6	6.07	0.80	5.96	1.13
Responsiveness																			
RS1+RS2 The **improved operational process** help you to justify in when service will be performed to customer with a prompt service	3	7	6	6	7	6	6	5	6	6	6	5	6	6	7	5.87	0.99		
RS3. The **improved operational process** can help you to increase the willing to help customer	6	7	6	6	5	4	6	6	6	6	5	5	6	5	5	5.60	0.74		
RS4. The **improved operational process** can help you to increase the responsiveness to customer request	7	6	5	6	6	6	6	6	7	5	6	6	6	6	6	6.00	0.53	5.82	0.78
Assurance																			
A1.The **improved operational process** will improve the instill confidence to your customer.	6	6	6	6	7	6	6	5	7	6	5	6	6	5	6	5.93	0.59		
A2. The **improved operational process** can help you to provide safe transaction to customer.	6	7	4	6	6	6	6	5	7	6	5	6	6	5	6	5.80	0.77		
A3+A4 The **improved operational process** can help you to improve or increase consistency courteousness to your customer, and provide you a knowleadge to answer customers' questions (more understand in your working process)	6	6	5	6	5	5	5	6	5	5	5	6	6	5	6	5.47	0.52	5.73	0.65

External Quality Dimension	OP 001	OP 002	OP 003	OP 004	OP 005	OP 006	OP 007	OP 008	OP 009	OP 010	OP 011	OP 012	OP 013	OP 014	OP 015	AVG	STD	Total AVG	Total STD
Empathy																			
E1. The **improved operational process** can help you to pay attention to individual customer.	7	6	5	6	5	6	6	6	7	5	7	6	6	7	6	6.07	0.70		
E4+E5 The **improved operational process** will help you to consider customer at heart and to understand the specific needs of your customer	4	6	5	5	6	6	6	5	6	5	6	5	6	4	5	5.33	0.72		
E2+E3 The **improved operational process** will help in improving a convenient operating hour to your customer, and increasing more attention to your customers.	4	6	6	5	6	4	5	6	6	6	6	5	6	5	6	5.47	0.74	5.62	0.78
Tangibles																			
T1+T2+T4 After **implementation of Improvement initiatives**, your organization has modern looking equipment. The physical facilities, and the materials associated with the service (such as contract, statements) are are visually improved.	2	7	6	5	6	4	6	6	5	4	4	5	5	3	4	4.80	1.32		
T3. After **implementation of Improvement initiatives**, customer contact employees have more neat appearance.	2	6	5	5	6	5	6	6	3	4	4	5	3	3	4	4.47	1.30	4.63	1.30

APPENDIX 11: THE SUMMARY OF HOUSING LOAN PRICING - Five leading financial institutions in Thailand

Conditions	Kbank	SCB	BBL	Nbank	HSBC
Eligible customers	-Thai nationality -At least 21 years old -The primary borrower must earn minimum gross income THB180,000 per annum - The number of co-borrowers must not exceed two	-Thai nationality -At least 20 years old -The primary borrower must earn minimum gross income THB180,000 per annum - The number of co-borrowers fewer than 6	-Thai nationality -At least 20 years old -The primary borrower must earn minimum gross income THB180,000 per annum - The number of co-borrowers fewer than 2	-Thai nationality -At least 22 years old -The primary borrower must earn minimum gross income THB180,000 per annum - The number of co-borrowers fewer than two	-Thai nationality -Age from 20-65 years old - The primary borrower must earn minimum gross income THB360,000 per annum
Loan period	30 years	30 years	30 years	30 years	30 years
Maximum loan- to-value	-Up to 80% of appraisal value or purchase price, whichever is lower -Up to 70% of appraisal value or purchase price, in case of purchase price more than 10 million baht	-Up to 95% of appraisal value or purchase price, whichever is lower -Up to 70% of appraisal value or purchase price, in case of commercial building	-Up to 80% of appraisal value or purchase price, whichever is lower. This is applicable to both sale value of land and house	Up to 80-85% of appraisal value or purchase price, whichever is lower. This is applicable to both sale value of land and house	-Single house: up to 80% of appraisal value or purchase price, whichever is lower -Condominium and commercial bldg.: up to 70% of appraisal value or purchase price, whichever is lower
Fee and expenses	- Front-end fee charges at 0.25 % of the loan, minimum fee rate of THB2,500 - collateral appraisal fee is THB 2500	- Front-end fee charges at 0.25 % of the loan - collateral appraisal fee is THB 2500-3000	- Front-end fee charges at 0.50 % of the loan - collateral appraisal fee is THB 2500	- Front-end fee charges at 0.25-0.50 % of the loan - collateral appraisal fee is THB 3000-15,000	- Front-end fee charges at THB5000 -collateral appraisal fee based on actual costs charged by appraisal agency
Interest rate	MLR= 6.5% (1% fixed rate for the first 3 months) -month 4th to the 12th at2.75% -month 4th to the 24th at4.25% -month 4th to the 36th at5.25% -month 4th to the 12th, bank charge MLR-1.50% -month 4th to the 24th charge MLR-0.75% -month 4th to the 36th charges MLR-0.50%	MRR= 7.0% 1)Fixed rate 0% for the six months, 7-12 MRR-0.25% 2)Fixed rate month1-12 at 4% 3)Floating rate, first year at MRR-3.5% 4)Floating rate, first two year at MRR-1.75%	MLR= 6.5% -Fixed rate first year at 2.9% -Fixed rate first two years at 4.9% -Floating rate year 1-3 at MLR-1%	MLR= 7.0% First two years at 2.5%, then MLR all the contract	MLR= 6.5% Floating rate -Year 1 = MLR-1.75 -Year 2 = MLR-1.50 -Year 3 = MLR-1.25 -From year 8 = MLR-0.25
Turnaround time	7 working days	7 working days	10 working days	10 working days	10 working days

APPENDIX 12: CUSTOMER SURVER RESULTS

Service Quality Dimensions	Credit Card (10 informants)	Trade Finance (10 informants)	Housing Loan (25 informants)	Branch (18 informants)	Total Average (63 informants)	Average of each dimension	Max	Min	Standard Deviation
Technical features									
Accuracy of service product (accuracy of loan contract, information)	5.60	6.70	6.16	6.17	6.16		7	3	0.99
Speed of service product (loan approval period)	5.30	6.50	6.52	5.67	6.08		7	3	1.00
Flexibility of service product (customise to suit the need)	4.90	6.00	6.24	5.56	5.79	6.01	7	3	1.05
Reliability									
Provide service as promised (e.g. loan approval on time, call back as promised)	5.40	6.40	6.20	6.22	6.11		7	3	1.02
Keep informing the change and progress of your service and transactions	4.40	6.10	6.00	5.44	5.60		7	3	1.20
Provide accurate service (right at the first time) with error-free transaction	5.60	6.60	6.20	5.94	6.10		7	3	1.00
Able to handle your questions and problem	5.60	6.20	6.48	5.89	6.13	5.98	7	3	0.94
Responsiveness									
Willing to help and to provide service	5.30	6.60	6.76	6.06	6.30		7	4	0.93
Response to your request	5.40	6.00	6.60	5.78	6.08		7	3	0.97
Provide prompt service (speed and efficiency)	4.90	6.60	6.72	5.83	6.16		7	4	0.92
Available to answer your questions	5.10	6.10	6.56	5.83	6.05	6.15	7	3	0.97

Service Quality Dimensions	Credit Card (10 informants)	Trade Finance (10 informants)	Housing Loan (25 informants)	Branch (18 informants)	Total Average (63 informants)	Average of each dimension	Max	Min	Standard Deviation
Assurance									
Provide safe and confident transaction	5.50	6.50	6.56	6.50	6.37		7	4	0.75
Ability and knowledge to answer your enquiries	4.70	6.30	6.72	6.06	6.14		7	3	1.06
Politeness of courteousness of staffs (consistency)	5.30	6.60	6.84	5.72	6.24		7	3	0.89
Trustworthiness and confidentiality	5.10	6.70	6.72	6.06	6.27	6.25	7	4	0.83
Empathy									
Attentiveness to your banking needs	5.50	6.50	6.80	5.89	6.29		7	4	0.87
Recognise you at first priority	5.60	6.40	6.80	6.00	6.32		7	5	0.80
Available to help and answer your questions	5.40	6.60	6.68	6.00	6.27		7	4	0.81
Friendliness and caring	5.10	6.70	6.84	5.83	6.25	6.28	7	3	0.88
Tangibles									
Attractive facilities (Appearance, convenient, cleanliness, tidy)	5.80	6.40	6.36	5.72	6.10		7	1	1.13
Modern-looking equipment (e.g. automated machine, ATM)	5.40	6.10	6.48	6.00	6.11		7	4	0.84
The neat appearance of customer contact staff	5.90	6.10	6.76	5.44	6.14		7	3	1.06
Document and material associated with service (contract, statement)	4.50	6.70	6.60	5.67	6.02	6.09	7	1	1.26
Price of service									
Fee/ Charge per transaction	4.90	6.10	6.08	5.78	5.81		7	3	1.16
Interest rate compared with other banks	4.60	6.30	5.64	6.17	5.73	5.77	7	1	1.31

APPENDIX 13: SUMMARY OF PERFORMANCE MEASUREMENT FRAMEWORKS

Performance measurement frameworks	The important constructs of the proposed theory model				Critical ideas/ criteria for developing the performance framework
	Internal quality	External quality	Cost / price	Customer satisfaction	
The balanced scorecard (Kaplan and Norton, 1992)	• The internal business perspective suggests the importance in translating the customer-based measures to the internal operations measures.	• The customer perspective measures in the BSC reflect the underlying concept of the external quality dimension, by considering both hard and soft aspects. • Provides an understanding of how to deliver value to customers.	• Highlights the importance that an organisation must consider the cost of product/ service, which could be perceived as price by customers.	• The idea to provide a broader view of performance measurement through customers' viewpoint. • Customer satisfaction is considered as an important mechanism in measuring the customer perspective.	• Provides the multidimensional and a balanced set of performance perspectives, which should be considered in achieving the organisation's objective. • Provides explicit linkages between performance measures.
The performance prism (Neely *et al.*, 2002)	• The efficiency dimension is relevant to the internal quality: both operations and employee aspects. • Employee is considered as one of the important stakeholders in the performance prism.	• The effectiveness dimension is relevant to the external quality. • Highlights the importance that framework should include both internal and external measures.	• The framework enables both financial and non-financial measures, by considering the relative importance towards efficiency and effectiveness measures.	• Consider both facets of satisfying customers and focusing on customers' contribution in return. • Customer is the central objective of the framework.	• Reflects the importance of the stakeholder centric view. • Provides explicit linkage between processes and stakeholders' needs. • Considers the strength from other frameworks to develop the performance prism.
The performance measurement matrix (Keegan *et al.*, 1989)	• Internal measures (Non-cost) are considered related to the internal operations aspect. • Internal measures provide the linkage with cost perspective.	• External dimension should include both financial and non-financial measures.	• The measures should mainly focus on cost driver basis. • Points out the relationship between performance measures that will affect cost perspective.	• Integrates all measures in the value chain in order to deliver value to the end customers.	• Performance measures must provide multi-dimensions. • Performance measures are hierarchical and integrated across business functions. • Performance measures must be based on cost driver basis.

Performance measurement frameworks	The important constructs of the proposed theory model				Critical ideas/ criteria for developing the performance framework
	Internal quality	**External quality**	**Cost / price**	**Customer satisfaction**	
The results and determinants framework (Fitzgerald *et al.*, 1991)	• The importance of providing the linkage between internal and external measure towards both cost and non-cost perspectives.	• The external quality can be viewed as the customer assessment *during* service delivery process. • It is vital to understand the causal relationship between internal and external measures.	• Clarifies the causal relationship of performance measures and financial perspective.	• Customer satisfaction can be viewed as the customer assessment *after* the service was delivered. • Customer satisfaction is considered as the function of determinants, or lagging indicator.	• This framework is based on two types of measures of results and determinant. • This framework provides the idea of considering the logical consequence (causal relationship) between performance measures.
The performance measurement framework (Brown, 1996)	• Input measures are relevant to the operations employee aspect. • The process measures have a similar focus as operations process aspect.	• Output measures include both product and service, related to external quality aspects.	• Output measures also consider the financial impact, resulting from the operations process.	• Outcome measures concern how to delight customers and satisfy their needs.	• This model attempts to integrate the hierarchical view of performance measurement and the business process together. • Provides the logical consequence of performance measures, towards a business process perspective.
The business excellence model (Malcolm baldrige and EFQM)	• Employee is an important category for measuring the performance within the organisation. • Internal quality dimension is relevant to both category 4.0 and 5.0.	• Category 6.0 represents the importance of quality results perceived by customer. • Category 6.0 also concerns the supportive process to provide the better service quality.	Regarding the objective of model is self-assessment, it seems to pay less attention to cost dimension.	Customer satisfaction in category 7.0 is the strongest weighted score of the model.	• The model provides a broader set of measures that is useful for selecting the important measures applicable to the measurement objective. • The model also considers the causal linkage between results and enablers.