

**Using an IT strategy to improve company interaction with
their supply chain in a Fire Truck Bodybuilding Business
in Thailand**

A thesis submitted in fulfilment of the requirements for
the degree of Doctor of Philosophy

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Declaration

I certify that this thesis contains no material which has been submitted previously, in whole or in part, to qualify for any other academic award of any other degree in any university; the content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program; any editorial work, paid or unpaid, carried out by a third party is acknowledged; and ethics procedures and guidelines have been followed.

Pakpoom Dejsakulrit

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Dedication

*This thesis is sincerely dedicated to my parents for their love, encouragement,
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List of Abbreviations

CEO	Chief Executive Office
CSCM	Collaborative Supply Chain Management
EDI	Electronic Data Intechange
ERP	Enterprise Resource Planning
ICT	Information and Communication Technology
IS	Information System
IT	Information Technology
LLC	Logistics Learning Capability
R&D	Research and Development
RBV	Resource-Based View
RFID	Radio Frequency Identification
SCI	Supply Chain Integration
SCM	Supply Chain Management
SCQM	Supply Chain Quality Management
SM	Strategic Management
TAM	Technology Acceptance Model
THB	Thai Baht
TQM	Total Quality Management
UPS	Uninterrupting Power Supplies
WMS	Warehouse Management System

Abstract

This research is a single case study of the impact of the introduction of both information technology (software, hardware and Internet) and a company policy about IT use on the internal operations of a fire truck assembly company and its supply chain relationships. Using Action Research, the research focuses on a fire truck assembly company in Thailand, where supply chain efficiency was not improving and where costs of, and relationships with, both upstream suppliers and downstream clients in the supply chain were increasing. The CEO decided that the introduction of ICT hardware and software would be an enabler to address the effectiveness, cost and relationship issues for the company. The research involves the interaction of the researcher and the company through three phases of change with the researcher being based in the company throughout the research process.

The research is framed as ‘strategy as practice’ reporting the process of strategy development, implementation and review within cycle processes of changes, renewal, review and further implementation. Strategy as practice is an approach that is concerned with a study of strategy related to what people do, focused on practice and understanding the human agency in the construction and enactment of strategy, concerned with ‘the doing of strategy: who does it, what they do, how they do it, what they use, and what implications this has for shaping strategy’. Therefore, strategy as practice can help improve practice by providing explanations about what happens when strategy is put into action, i.e. what activities take place and what are the outcomes of those activities. The research shows that there were positive changes within the organisation and staff members are willing to work more efficiently and effectively. This research provides evidence that IT can assist to change and improve business efficiency whilst training and policies can address the supports for business improvements. Staff members’ information technology knowledge also influences information technology usage and the information sharing within the organisation. This research adopted a qualitative approach, therefore three senior managers, a supplier and a trader, and other eleven staff members were interviewed and observed between the year 2009 and 2010. This research demonstrates that the implementation of various IT projects highlights the importance of the usage of IT and contributes to a deepening understanding of the impact of IT to the organisation that contributes to business improvements.

The changes in the company resulting from the introduction of new IT improved the efficiency of the upstream supply chain. The lead-time of orders for supplies and the accuracy of orders placed by the company both improved and promoted collaboration across the members of the supply chain. Suppliers delivered parts on time and with greater accuracy, thus improving truck assembly efficiency. Fire Trucks were delivered from the manufacturer on time as contracted and together with communications improvements upstream and downstream, operational process efficiencies flowed through to customer delivery.

Publication

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Chapter 1

INTRODUCTION

1.1 Focus of the study

This thesis reports a single case study of the impact of the introduction of both information technology (IT) (software, hardware and the Internet) and a company policy about IT use on the internal operations of a Fire Truck manufacturing business and its supply chain relationships. Many studies have been conducted on supply chain management (Kathawala, Yunnus & Abdou, Khaled 2003; Lankford 2004; Roethlein & Ackerson 2004; Romano & Vinelli 2001a; Sila et al. 2006; Yen et al. 2006) but there are only few studies where the main focus internally in the organisation is to address internal issues affecting the relationships along the supply chain (Sila et al. 2006). This thesis will focus on a Fire Truck business in Thailand; the business that constructs purpose-built Fire Trucks specifically for emergency-rescue purposes. This includes a roll-off assembly line ready for apparatus to be fitted. Having gained practical experience from the Fire Truck business for ten years, working in another company in Thailand, the researcher has a good understanding of the nature and characteristics of this industry.

This research focuses on a specific case study of a Fire Truck business in Thailand, where supply chain efficiency was not improving and where costs of, and relationships with, both upstream suppliers and downstream customers in the supply chain were increasing. The CEO decided that the introduction of IT hardware and software would be an enabler to address the effectiveness, cost and relationship issues for the company in its supply chain.

In the last decade of the twentieth century, development in Thailand, especially with the advent of information technology and its applications, has led to a revolution of technology

adoption (Casadesús & Castro 2005) in various enterprises and their respective supply chains. Business activities that have utilised information technology have gained fundamental advantages, especially in transactions between businesses such as improved communications flow (Shepherd & Günter 2006; Zeng & Pathak 2003). In the Thai environment, many factors differ from other countries, including politics, government policies, the readiness of business partners as well as many other mechanisms that impact on the use IT in supply chain management.

This study first seeks to identify factors that affect work processes and lead to improved internal work processes and better management in the Fire Truck business supply chain in Thailand (Power & Sohal 2001; Power et al. 2003). Secondly, this study seeks to understand how IT has been adopted by this Fire Truck business and to identify the benefits gained (Lancaster et al. 2006; Mason-Jones & Towill 1997).

Lancaster et al. (2006) claimed that technology provides a boost to supply chain management by automating calculations and providing efficient means of data storage. With the need to cut costs and focus on core competencies, many firms began to spin off units acquired via vertical integration and through partnering with other firms that provided the same expertise (Williams et al. 2002). Increased adoption of information technology as well as application of software driven systems have assisted firms in accomplishing efficient operations of various businesses which include the Fire Truck business under study in this research.

1.2 Background of the Company

CCC Company is a Fire Truck business in the emergency services sector in Thailand that assembles fire trucks, rescue and recovery vehicles, fire fighting boats, road sweepers, and sewage suction and cleaner vehicles, and the name of the company is a pseudonym. The main office is located in the main area in Bangkok and two factories are located in Nakhon Pathom and Nonthaburi provinces. The CCC Company also sells auto parts such as lighting systems, rescue equipment, and hose reels, which CCC was also an exclusive distributor for, and representative of, many worldwide manufacturers from other countries such as China, Germany and USA. These locations are strategic locations for CCC because the company can ship or export their products to other countries by sea conveniently. The CCC Company does not only sell products domestically, they also sell their products to international customers. Their customers in other countries can be international business agents or wholesalers, foreign

government agencies or private enterprises. Domestic customers are government departments, local communities, and private enterprises.

There are 100 employees in the main office in Bangkok and 50 employees in each factory (Nakhon Pathom and Nonthaburi provinces). The variety of products manufactured, assembled or sold by the CCC Company are shown in image 1.1 and image 1.2.

The CCC Company purchases auto part products such as lighting systems, rescue equipment, chassis, pumps, tanks, monitors, and hose reels from both local and overseas manufacturers, then assembles fire trucks and other products in Thailand under CCC's brand. The CCC Company use both international standards such as ISO 9001, EN (European Norm) – European Standard, and NFPA (National Fire Protection Association) – USA standards, and Thai standards for parts and assembling processes, to control and ensure the quality of fire truck products to customers and clients. Products are sold in both international and domestic markets. The major international markets are India, Bangladesh, and Laos. The CCC Company sells 70% of fire trucks to international markets, and 30% to the Thai domestic market.

Image 1.1: Major products sold by the CCC Company



Image 1.2: Auto parts sold by the CCC Company



At the CCC Company, the CEO assigned three key main informants to assist this research project, which were 1) Mr ST – the Head of the International Trade department with thirteen years experience with CCC Company 2) Mr TN - an accountant with no business background at all in the Fire Truck business first joined the CCC Company in the last six years [2005] and 3) Mr RJ –who has 30 years in project management and joined the CCC Company in the year 2008 as a consultant.

The three key main informants investigated, observed in the CCC Company, and similarly agreed that the following list of ten staff members participate this research project with willingness.

Table 1-1: List of staff members to participating in this research

Departments	Name	Descriptions
IT	Mr Nat	Worked in IT department and provided IT support to all staff members at the CCC Company. He started his career at the CCC Company in 2005.
International sales	Mr Chai	Recently joined the CCC Company in 2007 and started his career in the international sales department.
	Ms Wi	Recently joined the CCC Company in 2007 and started her career in the international sales department.
Procurement	Ms Bee	Started her career in the procurement department in the year 2000. Her duties mainly revolved around international procurement.
	Ms Joop	Started her career in the procurement department in the year 2002 and assisted Ms Bee. Her duties mainly involved international procurement.
	Ms Nick	Recently joined the CCC Company in 2006 and assisted Ms Bee and Ms Joop in international procurement.
Domestic sales	Mr Oh	Joined the CCC Company in the year 2005 and was involved in domestic sales. His major customers were in government sector, such as local community.
	Ms Fon	Joined the CCC Company in the year 2005 and was involved in domestic sales. Her major customers were private enterprises. She worked with Ms Ple.
	Ms Ple	Joined the CCC Company in the year 2003 and was involved in domestic sales. Her major customers were private enterprises in Thailand.
Finance	Ms Nid	Worked in the financial department since 1998 and her main duty was as a financial controller to the CCC Company.

1.3 The research problem and the Company's proposed solution

This research was designed to resolve the problem of a lack of improvement in supply chain relationships at the CCC Company, a privately-owned business established over 40 years ago. CCC also acts as an exclusive distributor and representative for foreign manufacturers such as American and European manufacturers in the Fire Rescue industry, however the core business of the CCC Company is manufacturing fire-fighting trucks.

The CEO of the CCC Company said that 'the company has to ensure the quality of the products in order to gain reputation from its customers'. In order to meet the changing requirements from customers, the CCC Company, in 2009, invested in technology by updating and modernizing its engineering used in the production process to assure its production capability. However, the complexity of work inside the company, the apparent inability to coordinate work efficiently amongst staff members, and miscommunication amongst staff members, resulted in delays in the work processes and therefore both delays in ordering supplies and delays in delivery of fire trucks to customers.

The CEO and senior managers identified further business problems in the CCC Company. These included complexity in the company's work processes; too much familiarity with the traditional work processes used for many years; and a lack of information sharing between staff. Inefficiencies were also identified as some necessary information from suppliers or clients was either ignored or not gathered appropriately; the filing system was antiquated; staff members in the same department could not continue the work when another staff member was absent on temporary leave or sick leave. This situation had led to a huge loss to the business each year – a one million Thai Baht loss in 2007 and 1.5 million Thai Baht loss in 2008.

The CEO believed that if the complexity issue could be resolved, it would certainly lead to business improvement with appropriate cooperation between suppliers and customers being achieved. Despite financial losses, the CEO was happy that orders meant that the business was improving, but it was not fast enough for the CEO, and not fast enough to turn a profit. The CEO decided that to increase the level of business improvement, a new style of management, new capital resources and buildings and an appropriate strategy had to be implemented. He then started investigating the obstacles that were obstructing the business flow. He and his senior managers found that the organisational culture and the traditional

work processes in the company had obstructed business growth. The CEO and senior managers had also found that technology had not yet been fully implemented in the organisation, and many staff members undertook duplicate work, a common practice in many businesses as noted in Melville et al. (2004). This has led to a time-consuming production process, inefficient working relations internally and poor communications and business relationships with upstream suppliers in the supply chain and downstream customers.

The CEO and senior managers also realised that a new expansion of buildings and facilities was needed to employ appropriate IT systems to facilitate workflow efficiency. The CCC Company then needed a strategy that described the design or architecture of improved value creation, delivery, and capture mechanisms to provide appropriate direction to the business. The importance of such a business strategy is in defining the direction that the business delivers value to customers, entices customers to pay for value, and converts those payments from customers to profit (Brandenburger 2010; Teece 2010).

The researcher was known to the CEO and the opportunity arose to participate in the development of solutions to the problem. This research then initially investigated the nature of the company and its supply chain, and the work processes used at CCC to service that supply chain. Following this initial investigation, the researcher discussed possible collaboration in developing and implementing solutions with the CEO and senior managers. The CEO, senior managers, and the researcher agreed similarly that the introduction of IT was needed. The introduction of IT (both hardware and software improvement, and access to the Internet; and an associated Company User Policy) had, they agreed, to be implemented rapidly and prior to the new building construction being completed so that CCC could introduce their staff members to new buildings and new work processes and a new business environment. This research is a study of the processes involved in implementing that strategic decision at the CCC Company and an analysis of the outcomes that emerged, using an Action Research framework.

1.4 Research Objectives and Research Question

The research developed through initial discussions and in collaboration with the CEO. The researcher established the key objectives for the research, which are:

- 1) To identify factors affecting the supply chain management process internally in the Fire Truck business; and

- 2) To assess the impact of IT on the Fire Truck manufacturing business' internal operations and on relationships with suppliers and clients in the supply chain.

The main research question then is:

- *How does the introduction of an IT-based work system impact on supply chain management in a Fire Truck business in Thailand?*

1.5 Research Concepts

This research seeks to solve the problem identified in the company and to strategically improve work processes within the company by deliberate adoption of IT to better manage the company's supply chain. Theoretically, the research is grounded in the process of strategy rather than the product of strategy ('strategy as practice' theory), in the network effects of the outcomes of IT use on supply chain relationships (Network Effect Theory) and in understanding the important role of information sharing (Information Sharing Theory). The research also utilises IT adoption theories related to individuals as employees in the company were affected by the IT introduced and then impacted by the effectiveness of those technologies. This is also help to explain an understanding of the term 'internal operations' of an organisation, which is to investigate deepening and inside how a business they operate a business. The gap was that the literature offered that IT would be able to help an organisation to improve the business operation and the researcher would like to investigate and attempt to learn how IT would help the organisation to increase their business performance. However, this study is not also about the reasons why staff in the company did or did not adopt technology. The focus is on the impact of a strategic decision to use IT in the company and of the strategies that resulted, on the way people worked in the company and how changes impacted the supply chain as well.

This research is not simply a study of strategy as a product (Porter 1979, 1985, 1987, 1991, 2008). Rather it is about a process of change created by strategy, studied and localised within one company. The research looks at the processes of strategy development and implementation across a period of time. The research approach of 'strategy as practice' offers a more dynamic practice approach to strategy and change that results from the strategy process. Traditional research on strategic IT and strategic information systems has focused on various influences such as technology, economics, power of suppliers, the IT function, competitive advantage, integration across organisational and intra-organisational boundaries, strategic context, product-driven transformation and the value of IT/IS (Buhl et al. 2012;

Gable 2010; Merali et al. 2012; Nolan 2012; Ward 2012). This research is built on a resource-based view of organisations and on IT as a resource. Few, if any, of these studies and many others available have looked at strategy and IT as practice.

Recent research shows that Knowledge Management, Standards and Information Technology are becoming more important factors attracting the attention of strategies in companies as they are playing a more significant role globally in almost all industries (Chan & Qi 2003; Prajogo & Sohal ; Romano & Vinelli 2001b). According to Zeng and Pathak (2003), it is claimed that revolutionary technology development has attracted business communities with the potential for IT to add value through adoption and application of these information technologies in terms of cost, speed and reach. In achieving better information integration, order response rates and market demand will increase (Mason-Jones & Towill 1997).

In addition, it is important to study how these factors will contribute to improved business management in the supply chain of the Fire Truck business being studied. However, the focus is on the effect of IT adoption in the company. According to the supply chain process model offered by Chan and Qi (2003), utilisation of information technology systems could provide opportunities to recognise problems in manufacturing and service operations and enable corrective action to be taken before a problem escalates. Thus, the quality management of the operations will improve. However, in the new millennium information technology systems have brought new developments in technology and organisational structures (Williams et al. 2002).

1.6 Research Methodology

Qualitative researchers study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them (Creswell 1997; Denzin 1994). The context of this research is embedded in the interplay of company managers, the company owner, company employees, supply chain partners and the researcher on a daily basis. These interactions created a complex environment so the researcher needed to interact regularly with all participants. In this way, the researcher becomes much more experienced with the context of their research and is able to justify their understandings based on the detail of their observations, discussions and interviews.

The research requires an understanding of what was happening and what then happens when a change is introduced. This research uses Action Research because the purpose of Action Research is to learn and understand how the implementation of an artefact or technology or

process, e.g. IT and policy development along the supply chain management processes at the CCC Company impacts on improved business quality. The impact of IT on improved business quality depends, in part, on industry characteristics and trading partners in an organisational population or field (Melville et al. 2004). This then is qualitative research using a single case study (Stake 1978, 1995; Yin 1994), typical of the use of Action Research methodology.

Semi-structured questions will be used to interview management staff level and the employees of one of the leading Fire Truck manufacturing companies in Thailand and its stakeholders involved in the supply chain (Kannan & Tan 2007) both prior to, and following three stages of the introduction of IT into the fire-truck company.

1.7 Significance of the study

The benefits derived from this research are to:

- 1) Understand the business process in the supply chain of the Fire Truck business in Thailand;
- 2) Recognise factors affecting work system processes that leads to business performance in supply chain management in the Fire Truck business in Thailand;
- 3) Acknowledge that work system processes leads to business quality management along the supply chain in the Fire Truck business in Thailand; and
- 4) Provide an indication of how quality enriches supply chains as a strategic asset of the Fire Truck business in Thailand.

The result of this study will provide an understanding to interested people in the quality of supply chain management applicable with the quality issue along with the issues of complexity in supply chain management (Levy et al. 1995). The quality in the supply chain will be addressed along with the complexity in the processes of management. Success factors will also be addressed to provide a better understanding to interested people as well as to add a new dimension for future research (Power et al. 2003).

1.8 Structure of the Thesis

This chapter (chapter 1) provides a general introduction to the research. Chapter 1 explained general information about the company and identification of major problem and proposed possible solutions to solve the problem in the business operations. The CEO identified that the

problem could be solved by using IT to enhance the business operations, which led to the review of literature based on the need of the CEO to rectify the problems in the company.

Chapter 2 is a review of literature related to fundamental principles and theories that contribute to an understanding of a supply chain in a Fire Truck business. A review of literature includes strategy, strategy as practice, IT, information sharing, and network effects, which contribute to the performance of the supply chain.

Chapter 3 provides a detailed description of the method used in this research. This chapter discusses the philosophy of the research method, an explanation of Action Research, the research process, and data collection and data analysis. In the research method, this chapter explains the design of this research, which employed Action Research to study strategy and how IT use impacts on the efficiency of information sharing within the organisation. The research process explains cycles in Action Research, how a researcher could derive information, how IT could enrich their business operations, and how a researcher could help the business to enhance their business operations leading to business performance improvement. This chapter concludes with a discussion of the data collection and analysis techniques used.

Chapter 4 describes the first cycle of Action Research. The chapter explores the perception of the CEO and senior managers who worked in the company for more than 40 years. Interviews were planned and undertaken at the CCC company office in Bangkok. The CEO and senior managers shared their perspectives towards their business operations, which led the researcher to understand major problems in the business operations. This analysis component of the research used a qualitative approach to understand and capture their problems and seek ways to solve the problem. Four IT projects were discussed and implemented in a second cycle. The major problems identified related to strategy in the organisation, information sharing, the use of IT, and network effects.

Chapter 5 is the second cycle of this Action Research. The chapter explains the Action Research processes, which include 1) diagnosing, 2) action planning, 3) action taking, 4) evaluation and 5) decision making for the future cycle. The IT projects developed from the first cycle were identified and implemented in this second action research cycle. Observations, note taking and interviews were used to collect information and explain actions of the employees to the implementation of IT. This chapter highlights actions, resulting from

the first cycle that were responded to, and the IT implementation and decisions proposed for the next Action Research cycle.

Chapter 6 is the third cycle of the Action Research conducted in this study. This cycle employed decisions derived from Cycle 2 for implementation. The processes used were the same as the first and second cycles. In this chapter, meetings, policy, and training were used to explain how the CCC Company enriched its IT implementation to enhance employees' ability to work more efficiently in the organisation, which later impacted both upstream suppliers and downstream customers.

Chapter 7 is the discussion and conclusion chapter. This chapter revisits the objectives and research question to confirm whether they were answered through this research. A single case study was summarised to propose how the supply chain can be enriched by using IT to enhance business performance through the lens of strategy as practice, network effects, and information sharing. This chapter identified the outcomes based on theories used in this research. This chapter also includes research implications, considerations of the limitations of the study, recommendations for future research, and the conclusion.

Chapter 2

LITERATURE REVIEW

2.1 Introduction

This chapter presents a review of existing research literature covering strategy, supply chain management, information sharing, and information technology (IT) adoption in the Supply Chain business.

This research addresses a strategic problem in a company which is very much dependant on its supply chain. As indicated in the first chapter, the CEO had decided that the solution to the problem was to use IT. He was of the opinion that IT had the potential to resolve the issues the company faced. Therefore this research will use existing research and theory in each of the relevant areas to make sense of what happened in the company during the business process change through implementation of IT. It examines the effects of those changes up and down the supply chain.

This chapter starts with a review of strategy to guide readers to understand the importance of strategy then lead to the competitive strategy and deepen into the strategy as practice. A review of literature then covers supply chain management, which highlights the difining of the supply chain management, the importance of supply chain management, capability in supply chain management, and the collaborative in supplychain management. The aim to review this supply chain management area is to understand and to perceive share knowledge, risks and profits by taking into account all related functional areas that participate in any process along the supply chain and value-added processes to meet the real needs of the end customer in an organisational perception.

The business performance involves with strategies for an organisation for price competition and cost reduction. A performance measurement is one area that was reviewed for a better understanding as it is a system that plays an important role in managing a business as it provides the information necessary for decision-making and actions.

Information sharing and IT adoption are also reviewed in this chapter to clarify the importance of the important role of information sharing and IT adoption at present to most organisations. Information sharing is a key important role for any supply chain management system as information sharing can help an organisation to speed up the information flow in the supply chain, improve the efficiency and effectiveness of the supply chain. At the same time, IT has become a major tool for providing links among customers and suppliers (Power 2005), and information processes allow firms to communicate with other partners. Therefore, all these literatures would shape the frame for this study and guide the researcher to conduct this research. Hence, the next topic discusses on strategy.

2.2 Strategy

An examination of strategic management (SM) and supply chain management (SCM) suggest how insights from each field can complement and support the other (Li et al. 2009; Liao et al. 2010). Specifically, several strategic management theories with its emphasis on explaining firm profits are useful to SCM (Lambert & Cooper 2000; Udin et al. 2006;), especially in regard to organisational effectiveness. Strategic management research has recognised that phenomena originating from several levels of analysis play a role in determining organisational effectiveness (Ketchen 2004). Strategic management's attention to understanding why some firms outperform others has implications for SCM. Operational measures such as speed, quality, cost, and flexibility are often the dependent variables of choice in supply chain studies (Ketchen 2004). Strategic management needs to be implemented to provide guidelines and to measure how well the supply chain process of the organisation is delivering value to customers and acting as a main competency for the organisation (Campbell 2003; Gilmour 1999).

Sadler and Hines (2002) argue that the operations and logistics functions of all enterprises in a supply chain need to connect their strategies. By connecting operations and logistics functions of all enterprises in a supply chain with their strategies, the aim is to formulate a set of strategies for better business quality performance (Sadler & Hines 2002). Although the supply chain is frequently referred to as a logistics network in the literature, supply chain

management emphasises the overall and long-time benefit of all parties on the chain through cooperation and information sharing (Yu et al. 2001). Supply chain information can be typified as comprising transaction planning, order placement, operations scheduling and logistics organisation at each level in the chain, and the information can be optimised in the information flow to serve the partners along the supply chain.

There is evidence that, for a number of organisations, once the operational cost and customer service benefits of supply chain integration have been achieved then a step forward is to apply the logistics concept to contribute to the implementation of corporate strategy (Dittmann 1996; Gilmour 1999). Strategy in this study relates to improvement in work systems designed to produce effective service delivery downstream in the supply chain and more efficient ordering upstream.

2.2.1 Competitive Strategy

Competitive strategy theory identifies the industry as the basic unit of analysis, and the product as the basic unit of business (Porter 1979). The beginning step prior a formulation of a competitive strategy is to define the industry structure and to understand them (Porter 1997).

Traditional strategic management theory focuses essentially on transaction and cost analysis (Liebeskind & Zack 1996; Porter 1991). Porter (1979) suggests competitive strategy, as popularly known as the forces driving industry competition, comprise of five categories of competition forces. They were the industry competitors, potential entrants, suppliers, substitutes, and the buyers. In the industry competition, a company has to compete with its existing rivals in the industry. The intensity of competition in the industry depends upon the number of competitors interacting in the industry. Potential new entrants are obstructed with many barriers to entry, such as economies of scale, product differentiation, capital requirements, switching costs, access to distribution channels, and the power of existing companies (Porter 1979, 1997). Porter's theory proposes a five forces model for industry analysis as demonstrated in Figure 2.1.

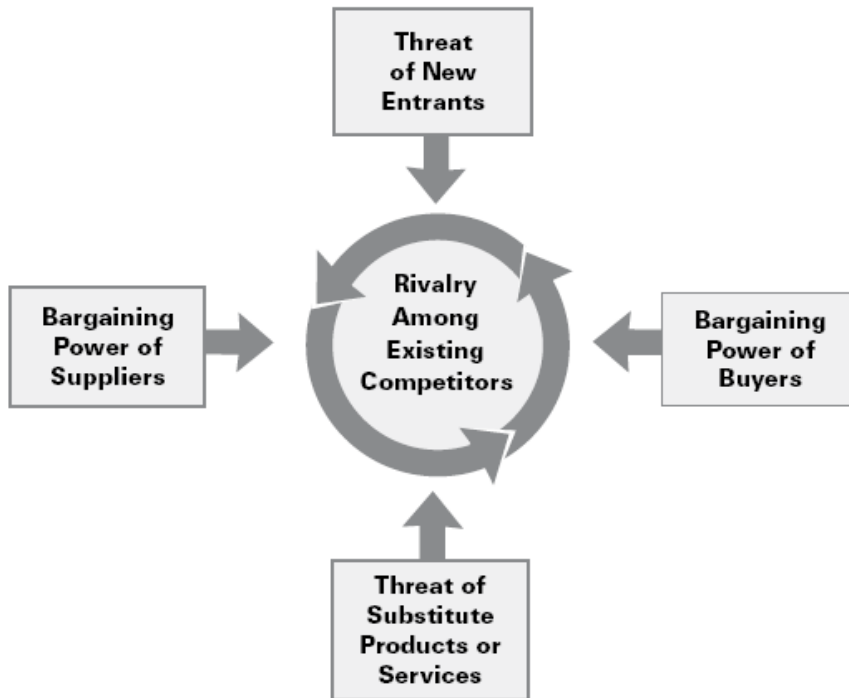


Figure 2-1: The five forces the shape industry competition

Source: (Porter 2008, p. 42)

First, competition already existed amongst competitors in the industry. The second category of force of competition was the threat of new entrants, which were from new competitors that wish to enter to the industry. Third, the suppliers have bargaining power that influences the inherent cost of a product. This group of suppliers in Porter's five forces model influence the existing business to be more competitive on cost. The fourth category of force of competition was substitutes, which play an important role in the industry since substitutes compete directly on price and performance. Finally, buyers or customers have relative bargaining power towards products as they have variety of choices that they can compare in the market (Porter 1979).

The generic competitive strategies in supply chain management include cost minimisation, value added maximisation, and control and adaptability enhancement (Kim 2006). Cost minimisation refers to the centralisation of internal structures with concentrated decision making that impacts how the organisation controls the maximum costs incurred in their business operation. While value added maximisation emphasises product quality assurance and differentiation, control and adaptability enhancement focuses on flexibility, and customisation or tailoring of products and services to meet the needs of customers. The nature of competitive advantage has shifted from a products-based perspective to be an

organisational resource-base, which is people (Martin 2008). In this research the focus of the solution is staff in the organisation, being assisted by IT.

These concepts of strategy are essentially products. They are most often represented as strategic documents and lists of strategic goals that are both the initiators and products of the strategic direction driving competitiveness.

However, this research is not simply a study of strategy as a product. Rather, it is about a process of change created by strategy, studied and localised within one company. The research looks at the processes of strategy development and implementation across a period of time. The research approach, 'strategy as practice', offers a more dynamic practice approach to strategy and change that results from the strategy process.

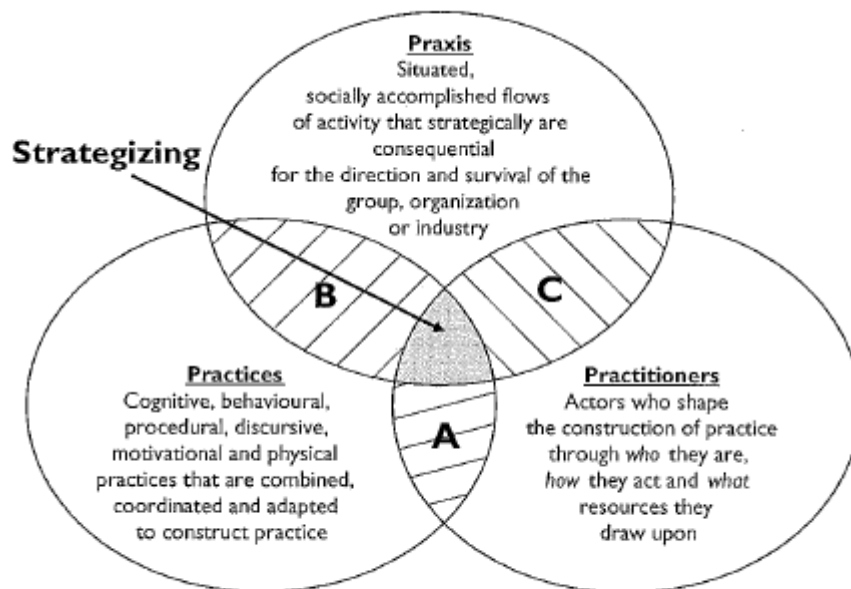
2.2.2 Strategy as practice

Strategy as practice is an approach that is concerned with a study of strategy related to what people do (Jarzabkowski et al. 2007; Jarzabkowski & Spee 2009; Whittington 2003). The focus is on practice and understanding the human agency in the construction and enactment of strategy (Jarzabkowski 2004; Jarzabkowski et al. 2007; Tsoukas & Knudsen 2002; Whittington 2003). Strategy as practice is concerned with 'the doing of strategy: who does it, what they do, how they do it, what they use, and what implications this has for shaping strategy' (Jarzabkowski & Spee 2009, p. 69). Strategy as practice can help improve practice by providing explanations about what happens when strategy is put into action, i.e. what activities take place and what are the outcomes of those activities (Raelain 2007, Schon 1983). Jarzabkowski et al., (2008, p. 283) state that 'strategy as practice examines the actual doing of strategy: the material artefacts to hand, the language that is used, the physical positioning in strategy episodes, the laughter, anger, excitement, anticipation, boredom, repetition and political manoeuvring that are brought together in strategy work'.

The argument for what people do and understanding the context in which they work as doers of strategy, is grounded in the need to understand the wider social context in which the strategy occurs and is constructed. These 'micro-phenomena' (Jarzabkowski et al. 2007; Seidl 2007; Whittington 2006; Wilson & Jarzabkowski 2004) provide a basis to see strategy as social practice (Jarzabkowski 2004) and offer the researcher the ability to try and identify and then describe the explicit links between the macro and micro levels of strategy being undertaken in organisations. Strategy as practice opens understanding of how 'localised interactions' are shaped by and shape the wider context of the organisational setting (Carter et

al. 2008; Chia 2004). By definition then ‘strategy as practice’ incorporates those activities that draw upon particular strategic practices, i.e. it is consequential for the outcomes, directions, survival of organisations across the complexities of organisational layers and through the interactions of multiple actors involved in the process (Jarzabkowski et al. 2007; Johnson et al. 2003).

A key element in researching ‘strategy as practice’ is to identify and describe the activities or practices happening in the strategy process. These practices are not static nor immutable (Jarzabkowski et al. 2007), but are diverse and variable, often combined, altered (Orlikowski 1996; Seidl 2007) or iterated (Corbitt 1997, 2000). Jarzabkowski et al. (2007) proposed a structured view of the strategy process (strategising) (as shown in Fig 2.2 below).



Strategizing comprises the nexus between practice, practices and practitioners. A, B, and C represent stronger foci on one of these interconnections depending upon the research problem to be addressed

Figure 2-2: A conceptual framework for analysing strategy-as-practice

Source: Jarzabkowski et al. (2007, p. 11).

A modified version of this would incorporate the dynamics of iterative changes. Processes and practices are often sequential, sometime serendipitous, and often iterative, adding another dimension to the nature of strategising. As shown in the modified model below (Figure 2.3):

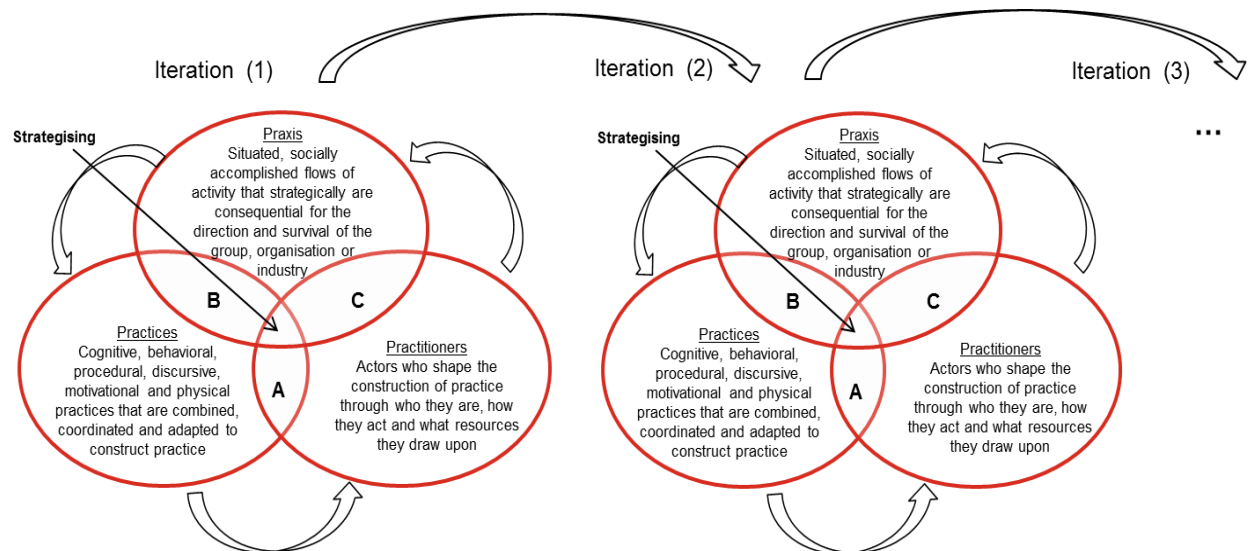


Figure 2-3: Strategy iterations in the CCC Company

The variations in all possible practices available in ‘strategy as practice’ are summarised in Table 2.1 below. These practices vary from workshops to discursive practices, conversational practices, procedures, planning, meetings, and other mechanisms like Powerpoint (Kaplan 2011), documents, charts, spreadsheets or notes (Jarzabkowski et al. 2012). Jarz et al. (2007) and Jarz and Spee (2009) call such activities praxis. Heidegger (1962) argued that human activities were mediated by artefacts such as meetings or plans or sometimes technologies which become implicated in a set of practices. A strategic plan or set of strategies are practices that enable strategy to develop outcomes (Kaplan 2011). Whittington (2007, p. 1579) argues that without these practices ‘strategy work could hardly happen’.

Table 2-1: A summary of how empirical strategising research operationalises key concepts in the strategy-as-practice agenda

Exemplars	Dominant practitioner focus (who is a strategist?)	Main practices examined (what do strategists do?)	Level of practice (what does it explain?)	Dominant analytic focus used (Figure 1) ^b	What theoretical bases are used
Ambrosini et al., this issue	Middle managers, supervisors and processing teams	Inter-team coordination activities	Firm-level: Variation in customer satisfaction	C	Resource-based view
Balogun & Johnson, 2004, 2005	Middle managers in multiple divisions	Sensemaking specific to what role (e.g. Engineer or Services) the strategist occupies Social practices of interaction Workshops	Firm-level: Implementation of strategic change	C	Sensemaking/schema theory
Hodgkinson et al., 2006	Multiple organizational levels according to workshop participation Top managers	Formal administrative practices and face-to-face interaction and their uses in phases of the evolution of activity Strategy meetings	Activity-level: Impact on strategy development	B	Institutionalization and diffusion of a practice
Jarzabkowski, 2003, 2005	Top managers	Formal administrative practices and face-to-face interaction and their uses in phases of the evolution of activity Strategy meetings	Activity-level: Evolution of streams of strategic activity over time	B	Social theories of practice Strategy process theory on structural context
Jarzabkowski & Seidl, 2006	Top managers	Discursive practices	Activity-level: Role of meetings in stabilizing or destabilizing strategic activity Activity-level: Discursive struggles according to diverse interests in shaping strategy development	B	Social theories of practice
Laine & Vaara, this issue	Top, middle and project managers	Discursive practices	Activity-level: Discursive struggles according to diverse interests in shaping strategy development	A	Discourse theory

(cont.)

Source: Jarzabkowski et al. (2007, p.15)

Table 2.1 A summary of how empirical strategising research operationalises key concepts in the strategy-as practice agenda (continued)

Exemplars	Dominant practitioner focus (who is a strategist?)	Main practices examined (what do strategists do?)	Level of practice (what does it explain?)	Dominant analytic focus used (Figure 1) ^a	What theoretical bases are used
Maitlis & Lawrence, 2003	Top managers, board members, other employees	Use discursive resources specific to the context and political practices according to their power bases	Firm-level: Failure in strategy formation	A	Discourse theory Theories of power and politics
Mantere, 2005	Top, middle and operational managers	Strategy formation practices; Organizing practices; and Control practices specific to what role the strategist occupies	Individual level: Construction of the self as a strategist	A	Structuration theory
Parouts & Pettigrew, this issue	Corporate and SBU strategy teams	Seven different strategy practices according to teams' perceptions of their evolving role in the strategy process	Activity-level: How practices evolve in association with changing strategy process	A	Strategy process theory on middle managers
Regnier, 2003	Top and peripheral (SBU) managers	Sensemaking practices and localized know-how specific to whether the strategist is a peripheral or top manager	Firm-level: Strategy creation and renewal over time	B	Strategy process theory on strategy evolution
Rouleau, 2003, 2005	Middle managers	Engage in sensemaking & sensegiving narratives that are specific to who the strategist is	Firm-level: Implementation of strategic change	C	Sensemaking theory Narrative theory
Salvato, 2003	Top managers	Gendered embodiment of agency in interpreting and selling change Enable the selection and variation of routinized patterns of action through managerial intent, know-how and networks	Firm-level: Evolution of dynamic capabilities over time	B	Dynamic capabilities Social theory of practice

Source: Jarzabkowski et al. (2007, p.16)

Table 2.1 A summary of how empirical strategising research operationalises key concepts in the strategy-as-practice agenda (continued)

Exemplars	Dominant practitioner focus (who is a strategist?)	Main practices examined (what do strategists do?)	Level of practice (what does it explain?)	Dominant analytic focus used (Figure 1) ^b	What theoretical bases are used
Samra-Fredericks, 2003, 2004	Top managers	Talk-in-interaction	Decision-level: Outcome of a specific strategic decision	A	Ethnomethodology/ conversation analysis
Schwarz, 2004	Consultants and clients	Six practices of interaction between consultants and clients	Activity-level: Generation of collective knowledge	A	Knowing-in-action theory
Sminia, 2005	Top managers	Layered conversational practices occurring within deliberate planning practices that emerged as unintended strategy	Activity-level: Emergent strategy formation	B	Social theory of practice Strategy process theory on strategic emergence
Srensaker & Falkenberg, this issue	Managers of business divisions	Interpret corporate-level practices, such as BPR, according to divisional interests	Activity-level: Variation in adoption of a practice and its association with strategy change	A	Sensemaking/interpretative approaches
Vaara et al., 2004	Top, middle and operational managers Organizations, Media Government bodies	Discursive practices	Institutional-level: Construction of strategic alliance as a dominant institution	B	Discourse theory

^a These exemplars are neither exhaustive nor exclusive but are intended to illustrate how some key studies within this field have addressed the challenges of strategy-as-practice research, as a basis for future research to take the agenda forward.

^b A, B and C relate to Figure 1. A is the interconnection between practitioners and practices. B is the interconnection between practices and practice. C is the interconnection between practitioners and practice.

However, whilst research has indicated that strategy can be iterative (Corbitt 1997, 2000) and/or evolutionary (Paroutis & Pettigrew 2007), there is also a view that it is also episodic (Hendry & Seidl 2003; Hodgkinson et al. 2006) and sometimes ritualistic (Bourque & Johnson 2008). It is important to enable researchers to realise the possibilities of this view of strategy as it relates to changes which are inclusive of evolutionary, iterative and dynamic. The extant literature on 'strategy as practice' (Table 2.1 below) summarises both practice and the resultant outcomes.

Table 2.1 A summary of how empirical strategising research operationalises key concepts in the strategy-as-practice agenda (continued)

Exemplars	Dominant practitioner focus (who is a strategist?)	Main practices examined (what do strategists do?)	Level of practice (what does it explain?)	Dominant analytic focus used (Figure 1) ^b	What theoretical bases are used
Samra-Fredericks, 2003, 2004	Top managers	Talk-in-interaction	Decision-level: Outcome of a specific strategic decision	A	Ethnomethodology/ conversation analysis
Schwarz, 2004	Consultants and clients	Six practices of interaction between consultants and clients	Activity-level: Generation of collective knowledge	A	Knowing-in-action theory
Sminia, 2005	Top managers	Layered conversational practices occurring within deliberate planning practices that emerged as unintended strategy	Activity-level: Emergent strategy formation	B	Social theory of practice Strategy process theory on strategic emergence
Stensaker & Falkenberg, this issue	Managers of business divisions	Interpret corporate-level practices, such as BPR, according to divisional interests	Activity-level: Variation in adoption of a practice and its association with strategy change	A	Sensemaking/interpretative approaches
Vaara et al., 2004	Top, middle and operational managers Organizations, Media Government bodies	Discursive practices	Institutional-level: Construction of strategic alliance as a dominant institution	B	Discourse theory

^a These exemplars are neither exhaustive nor exclusive but are intended to illustrate how some key studies within this field have addressed the challenges of strategy-as-practice research, as a basis for future research to take the agenda forward.

^b A, B and C relate to Figure 1. A is the interconnection between practitioners and practices, B is the interconnection between practices and practice, C is the interconnection between practitioners and practice.

Source: Jarzabkowski and Spee (2009, p.85).

Table 2.1 A summary of how empirical strategising research operationalises key concepts in the strategy-as-practice agenda (continued)

Exemplars	Dominant practitioner focus (who is a strategist?)	Main practices examined (what do strategists do?)	Level of practice (what does it explain?)	Dominant analytic focus used (Figure 1) ^b	What theoretical bases are used
Samra-Fredericks, 2003, 2004	Top managers	Talk-in-interaction	Decision-level: Outcome of a specific strategic decision	A	Ethnomethodology/ conversation analysis
Schwarz, 2004	Consultants and clients	Six practices of interaction between consultants and clients	Activity-level: Generation of collective knowledge	A	Knowing-in-action theory
Sminia, 2005	Top managers	Layered conversational practices occurring within deliberate planning practices that emerged as unintended strategy	Activity-level: Emergent strategy formation	B	Social theory of practice Strategy process theory on strategic emergence
Srensaker & Falkenberg, this issue	Managers of business divisions	Interpret corporate-level practices, such as BPR, according to divisional interests	Activity-level: Variation in adoption of a practice and its association with strategy change	A	Sensemaking/interpretative approaches
Vaara et al., 2004	Top, middle and operational managers Organizations, Media Government bodies	Discursive practices	Institutional-level: Construction of strategic alliance as a dominant institution	B	Discourse theory

^a These exemplars are neither exhaustive nor exclusive but are intended to illustrate how some key studies within this field have addressed the challenges of strategy-as-practice research, as a basis for future research to take the agenda forward.

^b A, B and C relate to Figure 1. A is the interconnection between practitioners and practices. B is the interconnection between practices and practice. C is the interconnection between practitioners and practice.

In this study of three cycles of change within an organisation, the practices of the participants and strategists are important elements to understand. So it is crucial that the strategy is not seen as products but rather as practices as a means of grounding the research. In more recent research Spee and Janz (2011) argue from empirical studies that there is a recursive process of recontextualisation and decontextualisation in the strategy process. They argue that during strategy planning the actors involved actualise the plan in the current situation of their own context (recontextualisation), but over time plans take on meanings through aggregation or change that ascribes meanings that are not part of what individuals themselves might have prescribed as meaning (decontextualisation). Ultimately, Spee and Jarz (2011) argue that throughout strategisation there are periods or episodes of talk and planning, recontextualising and decontextualising, leading to increased acceptance of the authority of the strategic plan (Fig 2.4).

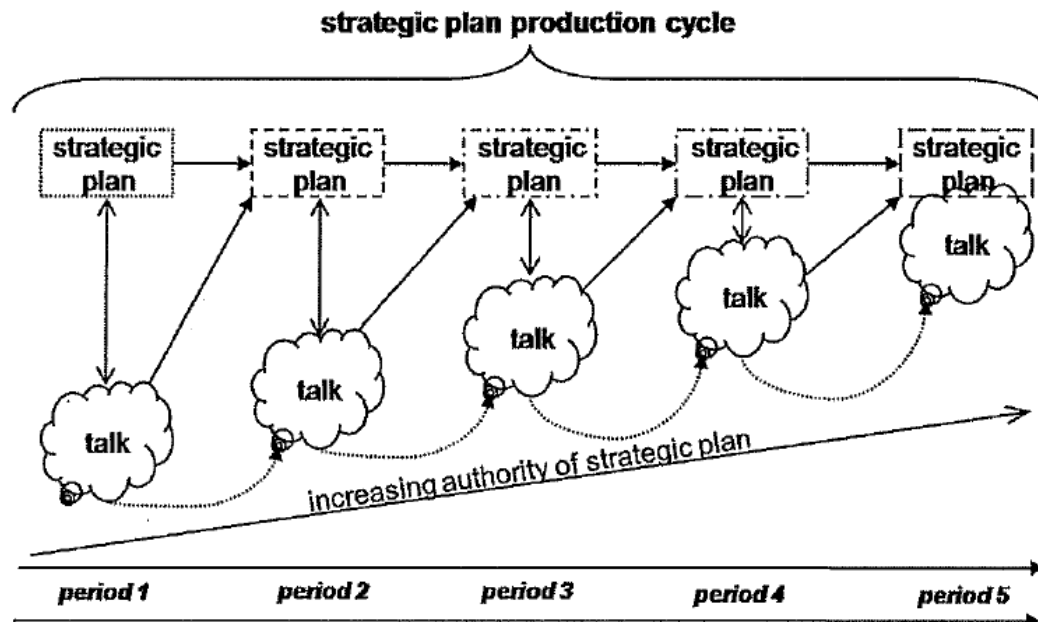


Figure 2-4: Recursive process of recontextualisation and decontextualisation

Source: Spee and Jarzabkowski (2011, p.1237)

However 'strategy as practice' alone is only part of the business context of this research. The research problem itself emanates from a supply chain issue.

2.3 Supply Chain Management

2.3.1 Defining Supply Chain Management

Supply Chain Management (SCM) first emerged in the literature in 1982 (Cooper et al. 1997; Zeng & Pathak 2003). The term ‘supply chain management’ is widespread and led to numerous kinds of definitions by different industries and academics. Supply chain is an integrative philosophy of managing flows of material, information, and finance from the earliest supplier of raw materials to the ultimate customers (Zeng & Pathak 2003). Zeng and Pathak (2003) explain that the supply chain developed through a four-phase process during which it progressively integrates a number of functions. They explained that a supply chain included all activities, functions and facilities involved both directly or indirectly in the flow and transformation of goods and services from the material stage to the end-user (Handfield et al. 1999; Sridharan et al. 2005). Zeng and Pathak (2003) further discuss that the concept of Supply Chain Management is an integration of business processes. Lee (2000) points out that supply chain integration constitutes the following three dimensions: information integration, coordination, and organisational linkages.

Supply Chain Management is a process-oriented, integrated approach to procuring, producing, and delivering products and services to customers and has a broad scope that includes sub-suppliers, suppliers, internal operations, trade customers, retail customers, and end users (Metz 1998). In another study, Morash and Clinton (1997) define supply chain structure as the organisational efforts by three or more firms that manage and integrate material and related information flows towards the customers. Other definitions by Lummus and Vokurka (1999) and Wisner (2003) emphasise customer service, an objective consistent with a marketing orientation. However, Carter and Narasimhan (1996) saw SCM as a primary future trend important for purchasing and supply management professionals in this 21st century. The scope of SCM has expanded, and the importance of SCM has increased.

A supply chain then links organisations directly with one or more flows of products, services, finances and information. The supply chain can be viewed as a set of interrelated processes rather than a series of discrete, non-aligned activities (Chwif et al. 2002; Douligieris & Tilipakis 2006). Supply chain management is a system that contains multiple entities, processes and activities from suppliers to customers. The basic concept behind SCM is how the raw materials and information flow from the supplier to the manufacturer, before final distributions to customers as finished products or services (Udin et al. 2006). Supply chain management involves adapting to changes in a complicated global network of organisations.

A typical supply network consists of inter-firm relationships that may connect multiple industries (Douligeris & Tilipakis 2006). As a result, supply network decisions often require consideration of a large number of factors, from multiple dimensions and perspectives (Pathak et al. 2007). Supply chain management includes the activity of linking companies' internal processes with the respective ones at suppliers' and customers' organisations, i.e. integration, providing a way to create unique and successful movement of supply along the chain (Frohlich & Westbrook 2001; Lorentz & Hilmola 2008).

A supply chain includes all the activities, functions and facilities involved (either directly or indirectly) in the flow and transformation of goods and services from the material stage to the end-user (Russell & Taylor 2008). One of the main goals of each supply chain should be to satisfy the final customers or the product end users. To achieve this goal, companies need to have a certain degree of knowledge about the partners in their supply chains including customers, suppliers, and the product end users. According to Gooch (2001), the degree to which companies know about their supply chain partners is a good indication of level of meaningful interaction that they possess (Sila et al. 2006). Many industries such as car manufacturing and steelmakers have embarked on reengineering efforts to improve the efficiency of their supply chains. The goal of these programs is to better match supply with demand so as to reduce the costs of inventory and stockouts (Lee et al. 2000).

The relationship amongst the supply chain partnership is a relationship formed between two independent members in supply channels through increased levels of information sharing to achieve specific objectives and benefits in terms of reductions in total costs and inventories (Yu et al. 2001). A supply chain includes all the value chain processes from suppliers to end customers. It is vital that each supply chain participant adds value from the perspective of the end customer in the supply chain. This assumes integration of both supply and demand side activities in the value chain. Increasingly, the integration of both supply and demand requires an understanding of the inherent differences. In this sense, Frohlich and Westbrook (2002) divided such integration into supply chain and demand integration. Trevile et al. (2004) then extended from this point and defined demand integrations as integration that supports market mediation, with the primary role of demand integration being the transfer of demand information to facilitate greater responsiveness to changing customer needs.

In the dynamic competition at present, production costs are not the only factor that could help organisations to gain and sustain competitive advantage. Other factors such as improving customer's service levels, product customisation, product delivery times and product quality

are major contributors to the organisation's competitiveness. Supply chain management can obtain superior value for customers and chain partners through design and coordination of the flow of materials from sources to manufacturer and finished products onwards to the ultimate customers (Harrison & Van Hoek 2008). This integrated supply chain is made possible by management decisions, sharing information and chain leadership (Sadler & Hines 2002).

Supply Chain Management is viewed from two different perspectives, which are the network perspective and Resource-Based View in supply chain management (Kathawala & Abdou 2003). The role of the supply chain in the network perspective is to link different organisations that operate businesses or related businesses together. The role of the supply chain in the Resource-Based View (RBV) is that organisations provide supplies as resources for other organisations. Supply chain management is related to the co-ordination of products, finances and information flows among suppliers, manufacturers, distributors, retailers and customers (Zhao et al. 2002). Therefore, many factors could influence the performance of a supply chain, with the forecast being a crucial factor (Zhao et al. 2002). Vickery et al. (2003) found supply chain integration to increase customer service levels directly, whilst indirect positive effects were found in relation to financial performance. Cousins and Menguc (2006) established the favourable effect of socialisation on business relationships and the enhancement of supply chain integration strategy. Rosenzweig et al. (2003) provide empirical evidence that supply chain integration in the consumer goods sector leads directly to improved business performance. Power (2005) reviewed literature on supply chain integration and implementation and Lorentz (2008) summarised that implementation is seen to require significant intra and inter-organisational change, as process redesign initiatives are usually required (Lorentz & Hilmola 2008). Satisfying the end customer can only take place when the entire supply channel from materials supplier to retailer are linked closely together in the pursuit of innovative ways to improve service value, reduce channel costs, and create whole new regions of competitive space (Roethlein & Ackerson 2004).

Supply chain management has a different focus between the network perspective and the Resource-Based View. The network perspective and Resource-Based perspective are examples that can demonstrate different views in a supply chain (Kathawala & Abdou 2003). Three different main characteristics are used to demonstrate the different between the network perspective and Resource-Based View in supply chain management. Firstly, characteristics of problems are different: the network perspective is highlighted by dynamic relationships, whilst the Resource-Based orientation is concerned with internal competence development. Secondly, the unit of analysis, the network perspective concerns in establishing relations,

whilst the Resource-Based View focuses on resources and capabilities of the resources. Thirdly, the nature of relations in the network perspective highlights the access of heterogeneous resource, but on the contrary, the Resource-Based View highlights the access to complementary resources.

Some of the important capabilities that companies seek to acquire through the use of the supply chain management concept is to be able to compete effectively on quality, efficiency, and innovation (Daghfous 2004). Quality is an important factor in the value-adding process involved in the production and delivery of products along the supply chain. The production of defect-free components and parts that meet the requirements of customers along the supply chain is critical for the quality of the final products. Sustaining quality efforts throughout the chain also has significant implications for reducing costs (Fynes et al. 2005). Thus, it is important to have a customer focused corporate vision in place while striving to implement the Total Quality Management (TQM) and SCM practices effectively both upstream and downstream (Sila et al. 2006). These are the command from the management level to the operational level and the report from the operational level to the management level. The supply chain members affect the quality of the information flows and the quality of processes used along the chain. Note that, in this study, the term Supply Chain Quality Management (SCQM) does not only refer to the management of quality in a pan-supply chain organisation but to all quality improvement activities that take place within a supply chain (Sila, I et al. 2006). Businesses at present become more customer oriented; they are reducing response time to customer requests, are improving quality, placing more emphasis on teamwork and managing for the long term (Gilmour 1999).

Businesses plan a new strategy by considering quality improvement factors in developing a collaborative or integrated SCM in order to improve or sustain their organisation's competitiveness through their SCM capability. The goal of SCM is to integrate aspects of total quality management that contribute to increased manufacturing efficiency and quality while reducing costs and maintaining the customer as the end point of the production line. The concept of SCM deals with the concept of an organisation achieving greater goods-related efficiency. The meaning of supply chain management and logistics are different (Moberg et al. 2004). Logistics processes and activities are a component of the supply chain, but supply chain management represents activities across all firms in the supply chain and it includes the planning, implementation, and control of multiple business processes (Mentzer et al. 2008; Moberg et al. 2004).

Handfield and Nichols (1999) suggest that three major developments in global markets and technologies have brought supply chain management to the forefront: customer expectations, the information revolution, and new forms of inter-organisational relationships. Each of these evolutionary developments has contributed to an integrated supply chain. In a broader range of companies operating business at present globally, the economic changes and business processes in SCM is becoming increasingly relevant for partners in a supply chain, such as suppliers and customers. Many definitions of the supply chain embodied the value chain and inter-linked the activities within an organisation and along the supply chain companies (Connolly et al. 2005). The concept of supply chain management can lower the cost of transit knowledge and problem-solving abilities (Heiman & Nickerson 2002) and the benefit of greater access to knowledge of operational processes is achieved at a low cost. It can help the businesses along the supply chains that pursue supply chain management to operate their business and to transact at low cost along the supply chain businesses and their own work system, by facilitating technology in the systems. Connolly (2005) suggests that the process requires knowledge, power, and governance in the supply chain, which can lead to a successful supply chain management implementation.

2.3.2 The Importance of Supply Chain Management

Management of manufacturing of small or medium sized companies requires speed, accurate and intelligent decision making to cope with the complex dynamic enterprise resources, as well as brutal uncertainty from external demands and variables (Huin et al. 2002). A number of research studies indicate that small firms using strategy performed better than non-strategic firms. Progressively, research efforts are increasing in this direction (for example, Hong & Jeong 2006, Wagner & Alderdice 2006).

Customers are the main focus of the chain since the primary purpose for the existence of any supply chain is to satisfy customer needs, in the process generating profit for itself (Chopra & Meindl 2001).

Supply chain management is needed for various reasons; for example, to improve operations, respond to an increase of competitive pressure, decrease costs of administration and operations. With technology facilitating information flow, coordinated supply chains are designed to meet the strategic and operational processes and objectives of the business, and to be effective and workable relationships both inside and outside the organisation (Li et al. 2009). Five things characterise the difference between the network perspectives and Resource-Based View in supply chain management: behavioral assumptions, problem

orientation, time dimension, unit of analysis and the nature of relationships. The following sub-section discusses capability in supply chain management.

2.3.3 Capability in the Supply Chain

Organisations seek competitive capabilities that enable them to exceed customer expectation and enhance market and financial performance. Consequently astute managers recognise that building supply chains offer opportunities to create sustainable competitive advantage (Tracey et al. 2005). The distinctive capabilities are based on superiority in process management, integration of knowledge, and diffusion of learning. They enable firms to complete the activities encompassing a business process in a manner that yields competitive advantage by providing superior customer value (Tracey et al. 2005). Esper et al. (2007, p. 63) define logistics learning capability (LLC) as ‘the ability of a logistics organisation to effectively maintain and manage learning organisation characteristics and to convert learning outcomes to new logistics management strategies, tactics and operations in support of further developing other logistics capabilities’ that link to the supply chain.

Spanning capability (Tracey et al. 2005) ensures that organisational processes focuses on providing superior value to external or internal customers. They provide the horizontal connections that ensure the resources available across the supply chain are utilised efficiently to fulfil customer needs (Tracey et al. 2005). The next section discusses collaborative supply chain management to understand how an organisation can improve its business performance.

2.3.4 Collaborative Supply Chain Management

Traditionally, relationships between firms have been at arm’s length and often adversarial with individual firms seeking to achieve cost reductions or profit improvements at the expense of their buyers and suppliers (Duffy & Fearne 2004). Supply chain management is the collaborative effort of multiple channel members to design, implement, and manage seamlessly (Burt 2004). Collaborative Supply Chain Management (CSCM) is a new strategy that has evolved in the 1990’s (Barratt 2004), and is motivated by earlier approaches such as just-in-time (JIT), electronic data interchange (EDI) and quick response (QR). CSCM not only enables the smooth information sharing and exchanging but also prepares organisations to share knowledge, risks and profits by taking into account all related functional areas that participate in any process along the supply chain (Chandra & Kumar 2001) and value-added processes to meet the real needs of the end customer. Collaborative supply chain management has been investigated to ensure the integrity of the products in terms of quality and to reduce

supply chain costs by getting the right suppliers and knowing the level of customer demand to increase their competitiveness in a highly competitive environment (Duffy & Fearn 2004).

It is argued that information and communication technology (ICT) in the supply chain (Adewole 2005; Dong et al. 2009; Harland 2005) can improve supply chain efficiency for small and medium sized enterprises (Campbell 2003; Danese et al. 2013; Liao et al. 2010; Wagner & Alderdice 2006), and enhance relationships among customers and suppliers (Morrissey & Pittaway 2006). Thakkar (2008) argued that a major barrier to widespread implementation of SCM in the small and medium enterprise lies in improved role interaction that often occurs between the parties involved. The activities in supply chain management were observed as a linear progression from the raw material supplier to the buyers. However, research shows that transactions in the supply chain are non-linear and exist in logistics processes (Thakkar et al. 2008) affecting collaboration.

Collaborative Supply Chain Management is viewed as one of SCM strategies that provides significant benefits, which include customer service improvements, cost reductions, efficient use of resources, and business improvements. The benefits aim to 1) improve customer service 2) reduce cost 3) use resources efficiently and 4) improve business process. However, the aim of benefits is explained below:

Firstly, customer service improvement is a service to customers internally and externally, which could be improved through implementation of CSCM. The CSCM could be implemented internally by the functional barrier, which could be reduced through better communication. Thus, a reduction of functional barriers also improves the effectiveness of the communication process in making decisions related to forecasting, designing and marketing. This situation indirectly influences the effectiveness of delivering, producing and distributing products to the external customer. As a result, the implementation of CSCM can increase the satisfaction and loyalty of customers towards organisations and its products (Mentzer et al. 2008).

Secondly, the cost of inventory could be reduced by implementing CSCM. The cost of implementing CSCM would be shared amongst the parties and this could lead to a reduction of production costs. Thus, the risk could also be dispensed amongst the parties in the supply chain (Esper et al. 2007; Fawcett et al. 2008; Mentzer et al. 2008).

Thirdly, an efficient use of resources refers to the use of resources for production that is available amongst the organisations in the supply chain. Resources that could be utilised more

effectively include human resources, technology and raw materials. In the collaborative environment, each party agrees to work together in order to achieve a common objective, which is to reduce operational costs such as transportation and administrative costs. Furthermore, resource-planning decisions such as human resource development and technology planning could be achieved effectively by considering the capabilities of all parties in the supply chain (Fawcett et al. 2008).

Lastly, business process improvement focuses on the CSCM implementation that can assist each party in the supply chain to align and improve their business processes in order to maximise their capabilities in encountering fierce competition and the challenge of a dynamic market. Improvements in business processes could help each supply chain party to eliminate the redundant and valueless processes, and maximise the effectiveness of the supply chain (Bhagwat et al. 2008).

These benefits, from customer service improvements; cost reduction; efficient use of resources; and business process improvement (Bhagwat et al. 2008; Jammerneegg & Reiner 2007), could be achieved through appropriate planning and designing of CSCM. However, CSCM is essential particularly in a dynamic market, addressing some barriers that exist in supply chain collaboration to make the CSCM more efficient. Impediments such as human development programs, internal and external business processes alignment and technology enhancement are important issues that are involved in CSCM planning to drive SCM more effectively.

Developing Collaborative Supply Chain Management requires an understanding of organisational knowledge from both internal and external sources. The major internal sources include business processes, databases and employees, while external sources consist of inter-organisational processes, customers, business partners, and market and competitive intelligence. Knowledge Management Systems include a variety of applications to capture, manage and leverage the knowledge associated with these diverse sources (Chen et al. 2006; Liao et al. 2010). By working more collaboratively with supply chain partners, enterprises can better understand changes in customer requirements and can respond more quickly to those changes.

Integration across disciplines or functional areas is needed in order to resolve the complexity of linkages in the supply chain and this integration process, as a traditional approach, should move into more strategic partnership through supply chain collaboration to ensure the

effectiveness of the supply chain system (Hoyt & Huq 2000). The focus of supply strategy can lead to an improved supply process across supply networks to improve business performance for the benefit of customers (Harland et al. 2005).

2.4 Business Performance

Many performance measurement systems were designed within the academic discipline of accounting traditionally since the main strategies of organisations for many decades were price competition and cost reduction (Giannakis 2007). The major strength of these frameworks is the integration of all the possible factors that could influence performance (Rai et al. 2006). Despite their usefulness and success however, these frameworks do not take into account the externalisation of the operations management discipline as their focus is the organisation itself. In the operations management literature historically, performance measurement focused on assessment of internal processes such as machine utilisation, machine reliability, employees' productivity, and inventory turnover (Li et al. 2009).

The purpose of measuring organisational performance is to (a) identify success; (b) identify whether customer needs are met; (c) help the organisation to understand its processes and to confirm what they know or reveal what they do not know; (d) identify where problems, bottlenecks, waste, etc. exist and where improvements are necessary; (e) ensure decisions are based on facts, not on supposition, emotion, faith or intuition; and (f) show if improvements planned actually happened (Parker 2000; Robbins et al. 2000). Traditional business performance measures have been mostly financial – measuring rate of return on investment, cash flow and profit margins. However, conventional measures failed to include intangibles and lagging indicators. Stevens (1998) suggests performance measurement in terms of inventory investment, service level, throughput efficiency, and supplier performance and cost. One important task in the performance measure of SCM is to identify the comprehensive metrics of tangible or intangible parameters in ranges of aspects that can affect performance (Coe et al. 2008; Stevens 1989).

In one part of organisational performance, production performance can be used as a measurement. Measuring the production performance and/or productivity of supplied material is becoming a major concern to owners and contractors due to the uncertainty of large cost and delivery of outsourced and supplied material (Harland et al. 2003; Kleindorfer & Saad 2005). It is a complicated process with many products that can be made in many different ways (Wickramatillake et al. 2007). One of the most difficult areas of performance measure

selection is the development of performance measurement systems. This involves the methods by which an organisation creates its measurement system (Wickramatillake et al. 2007). As every academic discipline in the business and management studies, operations management has experienced major changes over the last 50 years, reflecting the changes in the economic and business environment. The rapid changes in information technology enabled more effective communication between business and the competitive globalised environment that brought about the emergence of new forms of inter-organisational relationships (Giannakis 2007). Operations management became Inter-Organisational Operations Management with a focus on issues that cross the organisational boundaries and performance measurement systems were transformed accordingly to reflect these changes (Horvath 2001).

Gunasekaran et al. (2001) studied performance measurements and metrics used in a supply chain environment, then suggested a seven-page questionnaire for collecting data. The questionnaire was divided into four basic sections: plan (including strategy), source/supply (order), produce (make/assemble), and delivery (to customer). These four categories correspond to the four basic activities or processes in a supply chain, which are plan, source, make/assemble, and deliver (Gunasekaran et al. 2004).

Manufacturing firms are relying on integrated enterprise-wide information systems such as resource-planning systems for enhancing operating performance through improved information access and coordination across the various production areas (Bharadwaj et al. 2007). A performance measurement system plays an important role in managing a business as it provides the information necessary for decision-making and actions (Gunasekaran & Kobu 2007). Logistics Learning Capability as a partially important process function in the supply chain, however, is also used as a guide to develop a framework in this research.

Performance measurement is used to improve the performance of a supply chain under demand uncertainty; companies in the supply chain are suggested to share information and coordinate orders among them (Lee et al. 2000). However, it is not clear as to how the different methods of sharing information and coordinating inventory replenishments and production decisions among the retailers and suppliers help to improve the performance of the supply chain (Zhao et al. 2002). The performance measurement could be achieved through sharing information, replenishment of coordination, and connectivity.

Performance measurement can provide important feedback information to enable managers to monitor performance, reveal progress, enhance motivation and communication, and diagnose

problems (Chan & Qi 2003; Waggoner et al. 1999). Supply chain performance and effective management of the supply chain have been increasingly recognised as critical factors in gaining competitive advantage (Chen et al. 2000; Collins & Clark 2003; Sezen 2008).

Supply chain performance is two-dimensional, consisting of effectiveness and efficiency. Simply put, efficiency is doing things right and effectiveness is doing the right things. Supply chain effectiveness is measured in terms of consumer satisfaction (Zokaei & Simons 2006); supply chain efficiency, however, relates to resourcing the performance of the individual process (Hewitt 1994; Sezen 2008).

Production performance is a complicated process, as in most instances the quantification is difficult, with many products that can be made in many different ways. In addition, complications also exist due to the lack of pre-determined contractor and supplier performance attributes, which vary due to methods of manufacturing, suppliers used, site conditions, geographical location and timing (Proverbs & Holt 2000). For operational performance, overall lead time was used as a proxy since lead time reduction denotes operational efficiency and is a key competitive factor in the supply chain (Rungtusanatham et al. 2003).

Measuring the performance of a large-scale project within the supply chain requires careful representation and synthesis of real performance indicators and real progress tracking. Owing to the complexity involved in a large-scale project, it must be noted that measuring performance within the supply chain of a large-scale project differs significantly to other supply chain environments, for example in the manufacturing and service industries (Blanchard 2010). By meeting the needs and wants of specific customer segments and working backward to raw material suppliers, demand chain management is claimed to deliver significant performance improvements to companies successfully adopting this approach (Swafford et al. 2008; Varma et al. 2006; Vollmann et al. 2000).

Theoretically, knowledge creates competitive advantage for firms or companies. However, no research has demonstrated the influence of applied knowledge on a firm's performance under different environmental conditions (Germain et al. 2008). Organisations in uncertain environments can adapt their knowledge generating application abilities to the changing contingencies in the environment to challenge the conditions and to improve performance. Successful firms recognise the influence of applied knowledge assets on performance (Germain et al. 2008; Teece 2010).

A single performance indicator is generally inadequate to measure a supply chain performance measurement system because it is not inclusive of the interactions amongst important supply chain characteristics (Beamon & Ware 1998). It was guided by literature that single indicators, such as cost or time, cannot adequately measure supply chain performance because the supply chain performance must be measured at multiple levels. Resource measurement is one type of measurement that can be used as an important part of the measurement system. Too few resources can negatively affect the output and the flexibility of the system, while the deployment of too many resources also increases system requirements (Beamon & Ware 1998).

Most of these studies do not directly examine the performance of the relationship per se, but the effects or the outcomes of their effectiveness (Rauch et al. 2009). Although the closeness of the relationship and the effectiveness or efficiency of operations are clearly related (Carter & Rogers 2008; Yu & Lin 2008), outstanding organisational performance in terms of operations or finance is not necessarily an outcome of a successful relationship. As an outcome, there is increasing recognition of the importance of measuring the performance of this type of business relationship as well as their impact on organisational performance because of the increased dependency between parties (Choy et al. 2007).

Therefore, this review of business performance concludes that the key to improving supply chain performance is a general commitment to implementing both physical and technical management components, particularly information exchange, information flow structure and their supply chain processes (Moberg et al. 2004). This is because supply chain management seeks to enhance competitive performance by closely integrating the internal functions within a company and effectively linking them with the external operations of suppliers, customers, and other channel members (Kim 2006). Hence, information exchange, information flow structure and their supply chain processes will be more efficient when appropriately implemented in the organisation.

This argument suggests then that there is a need to understand the internal operations of a company in the supply chain. This research uses Action Research cycles to study what is happening, rather than what happened, viewing strategy as a process and performance as evolving through change. It is argued here that the context of this study is a supply chain company with a significant issue about efficiency in the supply chain. The decision to do something about the efficiency issue is strategic and involves improvement in work and supply chain performance. This is contextualised in Figure 2.5 below.



Figure 2-5: Early research conceptual context

What is clear from Teece (1998) and Claycomb et al., (2002) is that one key indicator of performance improvement relates to better information sharing within the organisation as a means to improve the efficiency of the supply chain relationships with an organisation. The following section discusses information sharing.

2.5 Information Sharing

Information and knowledge sharing is the process of exchanging knowledge between two or more people (Ford & Staples 2010; Ling et al. 2008). This information and knowledge can include existing and new information and knowledge and happens mostly while employees or experts with domain knowledge in organisations are doing something together (Lilleoere & Hansen 2011; Lindsey 2006). Information and knowledge sharing is important as research has shown that it can be used to create competitive advantage for the organisation (Bryant 2005; Grant 1996; Porter 1993).

Information sharing is a key ingredient for any supply chain management system (Li & Lin 2006). By taking data availability and sharing it with other parties within the supply chain, an organisation can speed up the information flow in the supply chain, improve the efficiency and effectiveness of the supply chain, and respond to changing customer needs more quickly (Li & Lin 2006).

Within the SCM domain, there are many aspects that need to be tackled for the purpose of practical application via topics such as performance evaluation of a supply chain and its members, inter-organisational coordination and management, how the supply chain members share the outcome of the operations (Croxtton 2003; Lambert 2001) human interaction in a supply chain (Giannakis & Croom 2006) and knowledge sharing among supply chain members. To reduce the cost in the supply chain, information and knowledge sharing between partners in a supply chain is important. It is also important that information and knowledge sharing happens internally. Management's role can facilitate, support and encourage organisational knowledge sharing (Van den Hooff & Huysman 2009) through the adoption of appropriate structures and policies. The literature on information sharing in the business press is proliferating.

Sharing information should provide cost savings and inventory reduction for the supplier, but it would not benefit the retailer much. However, combining information sharing with replenishment co-ordination would result in cost savings and inventory reduction for both the retailer and the supplier (Lee et al. 2000; Zhao et al. 2002). Increasing the level of integration and information sharing among the members of a supply chain has become a necessity for improving the effectiveness of supply chains (Sezen 2008). Sharing information could lead to an appropriate coordination. Coordination refers to whether and how many periods the retailers are willing to place orders to the supplier in advance (Zhao et al. 2002). Hence, connectivity creates the capability to share information. However, people make decisions regarding what will be shared and when (Zhao et al. 2002). The old saying, 'information is power' holds true in today's business world. As a result, many individuals are unwilling to share information that they perceive may place their organisations at a competitive disadvantage (Fawcett et al. 2007).

Advanced practice refers to the kind of practices that are meaningful for learning and applicable at an appropriate time and/or in another organisation by copying or adaptation (Wang 2008). With an understanding of advanced practice, the organisation might find it is a good approach for them where the practices will have value and usefulness in application. The advanced practice can be categorised at two levels: operational and strategic. Through the application of these practices, the organisation will have the potential to improve its business performance (Wang 2008).

A key strategic issue is the ability to leverage a partner's capabilities beyond tangible assets and explicit knowledge. Hall (1999) argues that there are more central skills or assets that

remain tacit and are less easily transferred within supply chains. Some of these assets are know-how, reputation and the culture that is resident in the fabric of the firm. To understand what gives rise to the capability is to understand the genetic structure of the firm (Spekman & Davis 2004).

The knowledge and experience gathered in different supply chain projects is not being systematically and successfully integrated into organisational knowledge bases (Schindler & Eppler 2003). Hence, the issue of managing this strategic resource through adopting a suitable methodology and a suitable approach has been brought to the fore. In recent years, there have been a number of research reports and articles on knowledge domain in knowledge management initiatives for Supply Chain Management (Chow et al. 2007). The two contributing areas that are examined in this research – Knowledge Management and system applications - are within two critical operations functions: purchasing and supply; and transportation and logistics.

However, the structure of knowledge that is applied to business operations consumes a great time in practice and requires good management systems to support the resultant changes. A well-structured knowledge domain will benefit the organisation in the long term for management and facilitate the organisation in practice (Alavi & Leidner 2001; Davenport & Prusak 1998; Quintas et al. 1997; Sun & Chen 2008; Van den Hooff & Huysman 2009). The availability of timely information enables the various stages of supply chain participants to be better integrated and coordinated to implement a new, cost effective and dynamic supply chain operations model.

Many key factors have been examined concerning knowledge creation in a supply chain. Lin and Wu (2005) suggested that collaborative relationships with customers as well as suppliers are the key to enhancing knowledge creation in a supply chain. Several elements present in successful collaborations include the presence of adequate communication, a sense of trust and respect, and ownership of commitment (Barufaldi 2000). There is a need for collaboration in creating a knowledge domain in the organisation.

The premise here is that SCM reinforces the concept of whole supply chains working collaboratively to obtain business benefits. Knowledge management principles adopted for the whole supply chain can unleash immense creativity and innovation providing significant competitive advantage to supply chain partners in the industry during periods of intense competition (Douligeris & Tilipakis 2006).

The improvement of information sharing through IT can result in the problem of information overload as the sheer volume of information inundates decision makers. Good management in information systems can organise the knowledge in the organisation in line with the need within the organisation (Chow et al. 2007). Hence, information sharing and visualisation is no longer a competitive advantage for firms. In the knowledge-based view, knowledge can contribute substantially to an intangible strategic resource in the supply chain (Shook et al. 2004). On the one hand, a firm is custodian of a large amount of knowledge that is present in either tacit or explicit knowledge and stored in a variety of sources within the organisation such as in the minds of experts, in databases, documentation and knowledge repository. On the other hand, the multi-directional flow of knowledge across the supply chain makes the interactions among the links highly decentralised. Because of this, the efficiency of the knowledge flow and manipulation between these interfaces is critical to the success of the supply chain (Chow et al. 2007).

Organisational learning scholars typically conceptualise organisational learning as including four primary constructs: information acquisition, distribution, interpretation, and memory (Adams et al. 1998; Hsu & Pereira 2008). Organisational learning needs the creation and control of both external and internal knowledge for both current and future operations (Leonard-Barton 1992). Thus, knowledge acquisition requires constant effort and continual experimentation from all employees of the organisation. Then, when an individual acquires knowledge, the company has to foster the distribution of this knowledge among the rest of members of the organisation.

The advantage of information sharing in SCM then has been intensively discussed (Zhao et al. 2002). Information sharing improves coordination between supply chain processes to enable the material flow and reduces inventory costs. Information sharing leads to high levels of supply chain integration by enabling organisations to make dependable delivery and introduce products to the market quickly. Positive performance was found to be effective from transaction processing technology, led to operational performance, and impacted favourably on strategic performance in the long run (Jin 2006). Information sharing then is another key contextual part of this research (Fig 2.5).

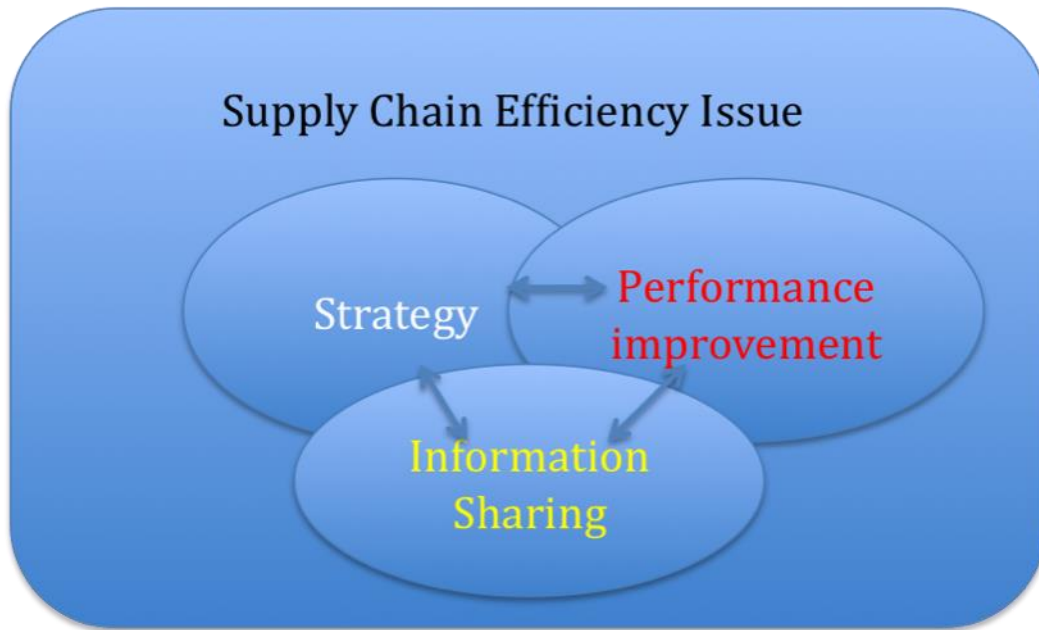


Figure 2-6: Research conceptual context

However the means to implement strategy, the way to develop ‘strategy as practice’, the ways to enable and assure improved performance and the facilitator of information sharing lies in this research context in the adoption and use of IT.

2.6 IT Adoption

IT infrastructure is considered a great facilitator for supply chain practices (Prasad & Sounderpandian 2003, Williamson et al. 2004). The rapid deployment of IT allows firms to integrate suppliers and customers, to have better communication and information sharing (Burgess et al. 2006), and to implement strategic supplier partnerships and time-based strategies (Bowersox & Daugherty 1995). Barua et al. (1995) explain that IT has a favourable impact on the operational side, such as inventory turnover, which results in higher levels of economic variables such as market share. The previous findings explained that IT would lead to higher operational performance, which eventually impacts favourably on strategic performance in the long run. Thus IT has become a major tool for providing links among customers and suppliers (Power 2005), and information processes allow firms to communicate with other partners, with improved timing and accuracy (Reda 1999).

Supply chain operations has attracted renewed interest by the development of advanced IT technologies including the world wide web and Internet, e-commerce (Oppong et al. 2005), electronic data interchange (EDI) (Mount 2003), enterprise resource planning (ERP) systems

(Rizzi & Zamboni 1999), and radio frequency identification (RFID) (Kelepouris et al. 2007, Hou & Huang 2006). Technology adoption and organisational conditions are also critical factors that affect the knowledge domain and knowledge creation in a supply chain (Wu, 2008).

Information technologies (ITs) are widely recognised as being critical factors in the supply chain because of the contribution they can make to improve the performance of both the individual firm and of the supply chain as a whole (Jin 2006). Information technologies are important to supply chain management because they enable companies to collect, analyse, and disseminate information amongst the chain members to improve decision making (Sprague & Watson 1979, Fawcett et.al. 2007). Analytical research modelling the adoption of information sharing in the SC has shown that information sharing results in substantial inventory reduction and cost savings to the manufacturer (Lee et al. 2000; Vereecke & Muylle 2006).

The relationship of IT and performance is complex. The IT researchers and practitioners directed their efforts to learn factors that helped the understanding of any unclear effect of IT on performance (Andersen & Segars 2001; Li & Ye 1999, Stratopoulos & Dehning 2000, Weill 1992, Jin 2006). Previous research has shown that information technology contributed to the improvement of organisational performance (Melville et al. 2004; Walsham & Sahay 2006). The research also suggested that the value of IT may be captured by trading partners or competed away and captured by end customers in the form of lower prices and better quality. Weill (1992) discussed in his study that IT investment alone would not guarantee returns. IT links the processes (Porter & Millar 1985) and its benefits will be magnified only when the information is effectively utilised. Superior performance will only be the reward of the companies who have not simply completed IT projects, but have successfully integrated IT into their supply chain activities (Jin 2006). Abernathy et al. (2000) for example, found that adopting appropriate changes in information and production systems decreases the growth of inventory levels. Their study confirmed the fact that suppliers investing in both information technology and short-cycle production capacity can move to lower inventory levels more quickly (Jin 2006). Thus, the lead time decreased and the products were managed more efficiently.

The use of information systems is to support and enhance coordination processes and can be theoretically linked to the notion of complementarities. Milgrom and Roberts (1995, p. 181) explain the idea that ‘doing more of one thing increases the returns to do doing more of another’. Scholars are beginning to view information systems increasingly as complementary

resources that enhance the value of other organisational resources and capabilities (Milgrom & Roberts 1995; Tanriverdi 2006; Tanriverdi & Ruefli 2004). In this study those capabilities relate to the improved management of the company's supply chain and improved flows of information, products and finances along the supply chain.

Information flow does not have the same lead-time constraints that a production process has, and via IT, it is possible to eliminate the information transmission leadtime from one end of the chain to the other. The main constraint to enriching a supply chain with market sales data is the common attitude that information is power. As a consequence of the traditional culture, companies will deliberately distort order information to mask their intent not only to competitors but even to their own suppliers and customers, unbelievable though this may seem (Towill 1996).

In assisting the information flow, the clearest aspect of Internet adoption is linked to performance improvements in terms of both effectiveness and efficiency. Processes become more transparent and complement the possibility of acquiring and sharing information in an easy and fast way (Deeer-Schmeltz & Norman 2002; Ronchi 2003; and Francesca et al. 2008). The use of the Internet is positively associated to collaborative attitudes within the supply chain and performance objective sharing with customers and suppliers.

The importance of measuring the value of information to utilise it to its best strategic advantage has been strongly advocated by Glazer (1993). Glazer states that although, through the implementation of IT, many companies are swimming with information, very few have gained a competitive advantage via their improved data flow. Implementation of IT is not enough if it only transfers the previous data pool faster; management of the information itself is the key variable. In short, it is not so much the technology of the IT but the information that is transferred that leads to success. This is significant for supply chains as their effectiveness relies on the efficiencies of information.

There are several benefits from using information and electronic business concepts in the supply chain. Various authors have described these benefits for individual functional areas such as marketing (Mc kenna 1997), purchasing (Ellinger & Daugherty 1998) and logistics (Zillur 2004).

Successful information enriched supply chains must view their information as a strategic asset and ensure that it flows with minimum delay and minimum distortion (Mason-Jones & Towill 1997).

Organisational learning is a mechanism by which the organisation transforms the individual knowledge of employees into social knowledge (Jim & Cegarra-Navarro 2007). Organisational learning is also considered as the development process of new knowledge or insights that have the potential to influence behavior. Organisational learning occurs when members of the organisation act as a learning agent for the organisation, responding to changes in the internal and external environment of the organisation by detecting and correcting errors (Argyris & Schon 1978). Argyris and Schon (1978) elaborate four constructs integrally linked to organisational learning, which includes knowledge acquisition, information distribution, information interpretation, and organisational memory. Firstly, Argyris and Schon (1978) suggested that knowledge acquisition is the process by which knowledge is obtained. Secondly, information distribution is the process by which information from different sources is shared and thereby leads to new information or understanding. Thirdly, information interpretation is the process by which distributed information is given one or more commonly understood interpretations. Lastly, organisational memory is the means by which knowledge is stored for future use (Argyris & Schon 1978).

There are two key elements then regarding IT in this study: (1) the introduction of new hardware and software in the company to improve work; and (2) giving staff in the company access to the Internet to improve information sharing and information flows:

1. At an organisational level Rogers (1995) and Bacon (1992) argued that cost was an issue for the company in deciding to adopt IT. Rogers (1995) model posits that the critical issues affecting adoption of IT are relative advantage, complexity, compatibility, observability and trialability. Other research has highlighted the importance of the role of senior management support (Thong & Yap 1995, Teo et al. 1997); and/or the significance of organisational factors such as problem solving, the nature of the business, supply chain improvement etc (Rogers 1995, Teo et al. 1997, Gefen et al 2005); and/or the influence of external pressures, as is common in supply chains (Soliman & Janz 2000, Looi 2005). Mehtens (2001) and Chan and Ngain (2007) have summarised the key adoption forces as perceived costs and benefits, organisational readiness and external pressures. Invariably the ultimate aim is to change work processes through the adoption of some form of IT. However, reengineering of business processes can take more than three to five years and cost millions of dollars including the investment in new technologies (Stedman 2000, Sriharan et al. 2005). When large expenditures are undertaken, the organisations have to ensure that the

expenditures result in the ultimate goal of all management, such as a maximisation of firm value.

At the individual level, technology acceptance has been well studied and theorised by Rogers (1983, 1995), Davis (1985, 1989) and in its extensions by Venkatesh, Morris, Davis and Davis (2003). Davis (1989) argues that an individual's intention to use IT is determined by the person's anticipated consequences of using the IT, rather than the effects of the attitudes of that person. He argues that perceived usefulness of the IT and perceived ease of use of the IT by the user affects both the attitude of the user and their intention to use it. This is most often referred to as the Technology Acceptance Model (TAM). This work has been both validated by many studies (eg Cahau 1996, Adams et al. 1992, Szjana 1996), but also criticised by other researchers (Brown 2002, Morris & Venkatesh 2000, Legris et al. 2003, Lee, Kozar & Larsen 2003). The resultant extensions to the TAM model by Wixom and Todd (2005) and Venkatesh et al. (2003) in creating the Unified Theory of Acceptance and Use of Technology (UTAUT) model added the new constructs of performance expectancy, effort expectancy, social influence and facilitating conditions such as age, gender, cultural background and intellectual capability and experience.

The Internet as an extension of IT beyond the workplace, has been shown to lower the cost of SCM along supply chain companies (Spiegel 2001) as well as allow direct connection to companies' main suppliers (McCormick 2001). Companies desiring to enhance the effectiveness of SCM efforts must look at the whole supply chain during the planning process and be sure to carefully assess the cooperation that can be expected from other supply chain members (Sridharan et al. 2005). The increasing benefits from SCM investments requires integration among supply chain members, however the integration may lead to overhauling the way work gets done in the organisation. For example, firms may find that installation of manufacturing and production-planning software can require that its plants begin processing to a demand-based schedule.

Carter (2007) shows that the use of Internet systems allows firms to streamline and integrate the supply chain with a more applied business format, thus enhance communication, coordination, and collaboration across organisational boundaries at operational, tactical, and strategic levels (Liu et al. 2009).

These Internet-enabled systems resolve the tradeoffs between low cost, rich content, real-time data, and broad channel deployment for traditional methods, such as Electronic Data Interchange (Liu et al. 2009; Rai et al. 2006). It has now become possible with the Internet to create larger networks and extend supply chain optimisation capabilities to numerous partners. Supply chain linkages can be made more easily and at lower cost using Internet technology (Green 2001). As such, the adoption of Internet-enabled systems is regarded as an essential element of supply chain operational strategy in the current market (Boyer & Hult 2005; Liu et al. 2009). However, many firms are still struggling with the development of Internet-enabled systems in their organisations and looking for appropriate technology to operate Internet-enabled systems more efficiently.

When discussing other important aspects of IT in SCM, timely and accurate information about products, resources and processes are highlighted. They are essential to operationalise a planning and control structure that effectively and efficiently achieves high performance, including in warehousing operations (Fabre et al. 2002). A warehouse is one party in SCM and the management information system in the warehouse provides, stores, and reports the information necessary to efficiently manage the flow of products within a warehouse, from time of receipt to time of shipping.

In the past ten years, supply chain management has moved from a low profile, ancillary concern to a recognised strategic component with tangible, positive impact on the firm's bottom line. Firms have confirmed their supply chain as their core competency in leveraging vendors, lowering costs, and becoming more responsive to customers (Rahman 2004). Sridharan et al. (2005) cited that when a standard supply chain template is modified to suit a customer's requirements, particular care should be used in the implementation and provider firms should be very insistent that client firms follow the provider's implementation methodology. When SCM IT systems are designed to be very complex to track a multiplicity of product varieties, there may be added difficulties in implementation. In addition, prior to a client switching to a new SCM IT system there should be adequate testing to see if the system meets the client's requirements. The evidence from his study demonstrated that supply chain implementation issues appear to impact the market value of the provider firms as well as the client firms.

It is argued that IT-based SCM systems can produce significant benefits. For example, a warehouse management system (WMS) can provide benefits that include increased

productivity, reduction of inventories, better space utilisation, reduce errors, support of customer EDI requirements, and value added logistics compliance programs (Fabre et al., 2002) that link to other parties in the supply chain.

In summary, IT used in supply chain management can improve a firm's performance through supply chain 'capabilities' which Fabre et al (2002) define as improved information exchange, inter-firm coordination, integration of activity, and supply chain responsiveness (Wu et al. 2006, Blankley 2008). The highest profit activity in electronic business is undoubtedly buying and selling things on the Internet with supply chain partners (Chiu et al. 2007, Supply Chain Council 2002). IT is the commonly used approach to gain competitive advantage and enhance the business value in this digital economy age. In essence then IT is the hub which, in this research, brings together the elements of supply chain, business performance, and information sharing as a means to strategically resolve the business efficiency issues in one company's supply chain and forms the conceptual context for the research (Fig 2.7)

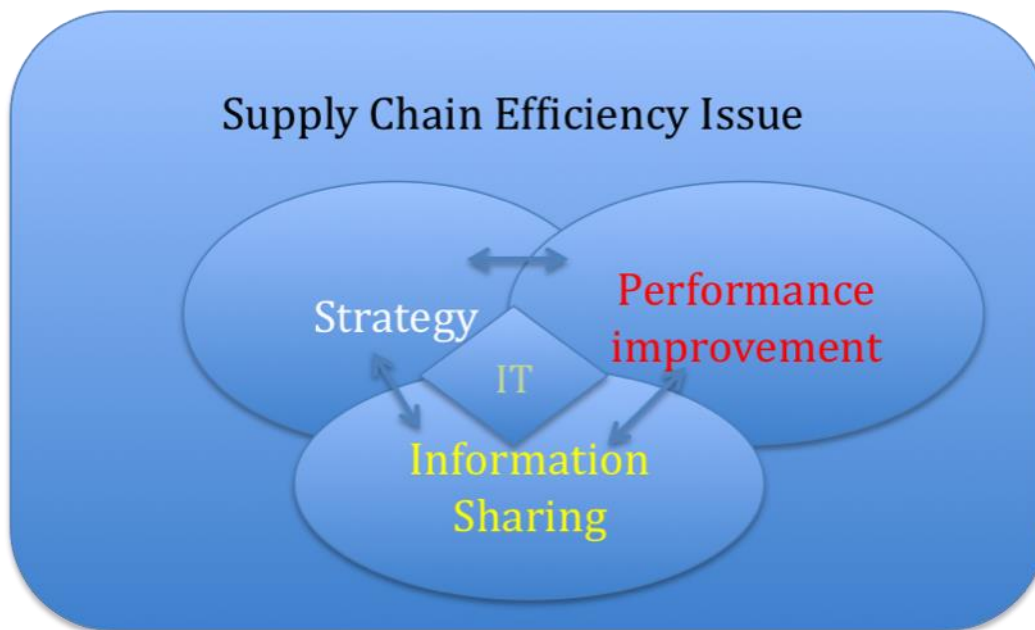


Figure 2-7: Final research conceptual context

2.7 Summary of theories used in this research

Table 2.2 demonstrated a summary of key main theories used in this research, which were strategy as practices, network effect theory, knowledge/information sharing, IT adoption, and organisational culture. These theories were mainly used to assist the researcher to frame and structure this research to design and to resolve the lack of improvement problem in supply

chain relationships at the CCC Company as well as other related business problems that were identified as the complexity in the work process for many years amongst staff members within the company.

Table 2-2 A summary theories used in this research

Theories	Explanation
Strategy as practice	<ul style="list-style-type: none"> • Strategy that concerned products emphasised on how and why creating or developing products to meet requirements of the customers (Liu et al, 2000) • Strategy as practice is an approach that is concerned with a study of strategy related to what people do (Jarz et al 2007, Whittington 2006, Jarz et al (2008). • A key element in researching ‘strategy as practice’ is to identify and describe the activities or practices happening in the strategy process. These practices are not static nor immutable (Jarz et al 2007), but are diverse and variable, often combined, altered (Orlikowski 1996, Seidl 2007) or iterated (Corbitt 2000, 1997).
Network Effect theory	(Katz and Shapiro 1986 and Chwelos, Benbasat and Dexter 2001) argues that actions/decisions of a firm both depend on and affect the collective actions of other firms in their relational network, in this case the CCC supply chain.

Knowledge/information sharing	(Nonaka 1994, Ford & Staples 2010; Ling, Sandhu & Jain 2008) is important as research has shown that it can be used to create competitive advantage for the organization (Bryant 2005; Grant 1996; Porter 1993).
IT Adoption	The key impact of certain concepts on acceptance/adoption: perceived ease of use, and perceived usefulness such as TAM and UTUAT.
Organisational culture	Van den Hooff and Huysman (2009) have found that organizational culture has an effect in organizational knowledge sharing, the more interaction of employees in an organization, the higher the trust.

The following section summarised and concluded the literature review chapter.

2.8 Conclusion

Business improvement along the supply chain has traditionally focused on operational logistics activities, for example, in a warehouse, pallets per hour is the typical measure for receiving and dispatch (Gilmour, 1999). There has been interest amongst managers and academics in research on SCM and SCI (supply chain integration). The term ‘supply chain management’ is used frequently in today’s materials management environment and is generally associated with advanced information technologies, rapid and responsive logistics services, effective supplier management, and increasingly with customer service.

The drive and influence for businesses is to cut costs continually and focus on core competencies. Companies try to cut costs in some or all of their production areas. Companies can no longer concentrate only on their own internal business operations, but work with customers and suppliers effectively and efficiently, because the performance of companies is greatly affected by their partners within the same value chain (Choy et al. 2007).

Appropriate information technology designed for a business, used with appropriate information, and applied efficiently with the participants, means the work system of an organisation could be enhanced in terms of business quality and performance. Process integration has been praised by many studies (Hulsmann & Grapp 2006; Shang & Seddon 2007) for providing better control and coordination that leads to business quality and performance in supply chain.

The majority of research in measuring organisational performance in supply chains - which includes perceived management processes, standards, knowledge domains, and IT - could be studied through a review of the literature in business and supply chain management (Tracey et al. 2005). It can also reveal that business relationships are extremely intricate constructs that are developed through systems or networks (Walsham & Sahay 2006). It is in fact groups of individual managers, employees in the organisation or departments that interact with one another (Sridharan et al. 2005; Stevens 1989). Without a clear method for defining the performance criteria in the supply chain, a potentially beneficial performance for an organisation could be neglected (Tanriverdi 2006). In the strategic management and marketing literature, organisational performance has been assessed for example by measuring the degree to which objectives have been achieved, and using managers' perceptions of the relationship effectiveness in the organisation (Schultze & Leidner 2002).

As the supply chain becomes more flexible and sophisticated, requirements on supply chain partners increase at different levels in different organisations (Tracey et al. 2005). Cooperative planning, real-time exchange of information and commitment to high service levels are essential for each partner in the organisation. Therefore, the organisation has to re-evaluate its operational partnerships, including raw material suppliers, manufacturers, and logistics providers to increase the efficiency level of their operational processes. The organisation also plans to enhance its partnerships with key retailers to ensure that the supply chain is optimised from end-to-end, from the raw material supplier to the retailer (Du 2007). Importantly in supply chain management, technology is another area of major improvement. The organisation can employ enhanced communication capabilities including sophisticated IT systems in their organisation (Esper et al. 2007; Markus 2004).

In maintaining competitive advantage of the company through supply chain integration, Du (2007) suggested that the company formulate an implementation strategy in which supply chain management is practical and feasible both internally and externally; establish a long-term cooperative supply chain relationship based on trust, cooperation and open exchange;

increase investment in information systems, and make full use of modern management technology applied effectively in supply chain applications, resulting in a reduction in non value-added behavior (Chopra 2003; Chopra & Meindl 2003). The next chapter addresses the research methodology adopted in this research.

Chapter 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter explains and provides justification for the research methods used to both collect and interpret data used in this study. This study uses Action Research and employs qualitative research methods using an interpretive approach where the meaning of the phenomenon is created by participants and their perception of the world. In this study, the participants shared their perceptions with the researcher in their working environment with their consent and willingness. This interpretive study seeks to understand real life processes, and uses various research processes to provide an understanding of what is taking place in the company being studied.

3.2 Philosophy of the method

The aim of this study is to understand the real life processes of factors that could lead a Thai Fire Truck business to improve business performance in practice. An interpretive approach was selected because the knowledge of reality, including the domain of human action, is social construction by human actors (Walsham 1993, 2006) that can be explained best by the performance of the employees in the organisation. This approach is consistent with the construction of the social world characterised by interaction between the researcher and the participants (Mingers 2001) and is consistent with the ‘strategy as practice’ theoretical approach where that social construction of strategy can be iterative (Corbitt 2000, 1997) and/or evolutionary (Paroutis & Pettigrew 2007), episodic (Hendry & Seidle 2003, Hodgkinson et al. 2006) and sometimes ritualistic (Bourque & Johnson 2008).

This study is conducted as empirical research undertaken by engaging with theories and interpreting data using qualitative, and hermeneutic (or interpretive), rather than quantitative methods. The quantitative paradigm is termed traditional, positivist, experimental, or empiricist (Creswell 1994, 2007) and quantitative research expresses meaning by using numbers such as percentages or statistical coefficients (Neuman 2006). A quantitative study is consistent with the quantitative paradigm, and is explained by Creswell (1994) as an inquiry into a social or human problem, which is based on testing a theory composed of variables, measured with numbers, and analysed with statistical procedures. The findings from the quantitative approach determine whether the predictive generalisations of the theory hold true. The quantitative approach holds that ‘the researcher should remain distant and independent of that being researched’ (Creswell 1994, p. 6). In this research the subjects of the research are humans in their work context. It is their perceptions that ‘strategy as practice’ seeks to explore. Therefore dealing with quantitative theory in this context is not relevant.

Qualitative research more generally refers to a study that investigates a social human problem where the researcher conducts the study in a natural setting and builds a whole complex representation by rich description and explanation (Creswell 2008). Qualitative methods are essentially descriptive and inferential in character. Qualitative methods focus primarily on the kind of evidence (what people tell you, what they do) and that will enable researchers to understand the meaning of what is going on (Creswell 2007; Gillham 2000). The researcher can gain an understanding of the nature of phenomena from the participants’ point-of-view. The point-of-view of the participants provides deeper insights of information. Qualitative methods enable the researcher to carry out an investigation where other methods are not justifiable, little is known about the study, to explore complexity, and view the case from the inside-out (Gillham 2000; Johansson 2007)

In qualitative research design, the use of theory is less clear than in quantitative designs. Creswell (1994, p. 1) claims that the ‘qualitative study is defined as an inquiry process of understanding a social or human problem, based on building a complex, holistic picture, formed with words, reporting detailed views of informants, and conducted with a natural setting’. Creswell (2007) further suggests that qualitative research takes place in natural settings. The qualitative researcher often goes to the sites of the participant to conduct research. The visiting of participants at their sites enabled the researcher to develop the level of detail about the individual participant or place to be highly involved in the actual experience. This research is located in one particular company site and this research approach is therefore appropriate. Tashakkori and Teddle (2003) claim that qualitative inquiry is more

comprehensible as a study in qualitative approach intends to understand the big picture for social scientific criticism than as any particular kind of social theory, methodology or philosophy. Creswell (1994, p.4) suggests that ‘data in qualitative research are in the form of words include quotes or descriptions or particular events’ and a qualitative study is rather consistent with the inductive model of thinking, evolved methodological design, and may include few terms defined at the beginning of the plan. Creswell (1994) also emphasises that the qualitative model is not being tested in the study but is rather modified in the study. The aim of this research is to learn and understand factors that lead to quality performance improvement in the Fire Truck business in Thailand both internally and also with its external partners. Thus this approach is most relevant.

Table 3.1 demonstrates the comparison between qualitative and quantitative research to guide understanding the assumptions of each paradigm based on epistemological, ontological methodological, and rhetorical assumptions.

Table 3-1: Comparison of qualitative and quantitative research

Assumption	Qualitative	Quantitative
Use of philosophical assumptions and employ of strategies of enquiries	Constructivist/ advocacy/ participatory knowledge claims phenomenology, grounded theory, ethnography, case study, and narrative	Postpositivist knowledge claims, survey and experiments
Epistemological Assumption	Researcher interacts with that being researched	Researcher is independent from that being research
Ontological Assumption	Reality is subjective and multiple as seen by participants in a study	Reality is objective and singular, apart from the researcher
Methodological assumption	Inductive process Mutual simultaneous shaping of factors Emerging design – categories identified during research process Context bound Patterns, theories developed for understanding Accurate and reliable through verification	Deductive process Cause and effect Static design – categories isolated before study Context free Generalisations leading to a prediction, explanation and understanding
Rhetorical Assumption	Informal Evolving decisions Personal voice Accepted qualitative words	Formal Based on set definitions Impersonal voice Use of accepted quantitative words

Sources: Creswell (1994 and 2007)

According to the literature on research methods, this research study uses the qualitative approach as the qualitative research method is designed to help researchers understand people and the social and cultural contexts within which they live (Silverman 2006). The goal of this research is to understand how IT impacts on the work system in the supply chain management of a Fire Truck business Thailand that leads to business quality performance and has a positive influence on the level of supply chain integration. It is therefore argued that the goal of understanding a phenomenon from the point of view of the participants and its particular social and institutional context is largely lost when textual data are quantified (Creswell 2007; Patton 2002; Silverman 2006). Therefore an interpretivist form of qualitative research was adopted.

The decision to adopt a qualitative approach in this research was to investigate the real problem within the organisation. The CCC Company was in a position of expanding and relocating its business into new premises in the same area. Many new constructions were undertaken and new systems were investigated for implementation. The business owner wanted to step into a new generation of management, improve the business operations, whilst maintaining and improving the quality of products. Then it was an appropriate time for the researcher to step in and propose assistance for them with a change to improve the business operations. In essence, the researcher had to interpret what those involved in the company said, believed, wrote and decided about.

An interpretative research methods approach looks for multiple interpretations and a deep understanding of the often conflicting rationalities of the actors involved in information systems innovation (McGrath 2005). To further explain the interpretive approach in this study, it was necessary to make a distinction between qualitative research and the interpretive approach because they are not interchangeable terms (Neuman 2005). Interpretive research assumes that 'our knowledge of reality is gained only through social constructions such as language, consciousness, shared meanings, documents, tools and other artefacts' (Kline & Myers 1999, p. 69). Interpretive phenomenology uses the researcher as the data collection instrument and takes a self-conscious approach to research. Interpretive research uses interviews in combination of open-ended and structured questioning methods and looks for meaning in the narratives created (Maggs-Rapport 2008).

The interpretivist tradition steers researchers towards a different outlook, where the primary goal is not to develop theory that is testable in a narrow sense (Gregor 2006). The interpretivist research makes an understanding of people in relation to the environment in the

complex world of lived experience from the point of view of those who live it (Schwandt quoted in Gregor 2006). The process of interpretive phenomenology develops through three distinctive stages which are fore-understanding, interrogation and reflection (Maggs-Rapport 2008). Once the phenomenon is explored, texts can be analysed by comparing emergent themes across and within groups to discover commonalities and shared ideas (Morrison 1992).

Therefore, interpretive research methods have been increasingly used in information systems and have become much more important in the information systems field than it was in the early 1990s (Walsham & Sahay 2006) because researchers would like to study and learn experience from human thought and action about information technology and information systems. Similarly, the narrative way of writing research reports has become more popular (Heikkinen et al. 2007). In this case, the researcher can understand deeper insights into information technology and information systems development by the use of interpretive research methods in a particular case study on a single Fire Truck manufacturer.

Case study is ‘an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident’ (Yin 2003, p. 13). Also, Yin (2003) suggests the researchers who adopt a case study design were conscious that their findings could be challenged. Also, many studies come across as quite solid in methodological terms, with in-depth case studies being common (Walsham & Sahay 2006). Simply adopting case studies with misunderstanding of the logic behind theoretical sampling, as opposed to statistical sampling, could lead to unjustified criticisms of case study based papers (Andrade 2009). However, case studies were appropriate for studying topics where attitudes and behaviors can best be understood within their setting (Andrade 2009; Gillham 2000; Yin 2008). This was especially important in ‘strategy as practice’ research where context and setting was a very important element (Jarzabkowski et al. 2012, 2007, and Jarzabkowski and Spee 2009).

The outcome of exploratory procedures in this case study research is the production of inductive derived generalisation about the group, process, activity, or situation under study. The emergent generalisations were typically many and varied; they often included descriptive facts, folk concepts, cultural artefacts, structural arrangements, social processes, and belief systems normally found in the group, process, activity, or situation under study (Given 2008). However, Yin (2003) proposed that adopting a consistent and planned approach to the research process could assure the validity of the data collected and support the interpretations made. Therefore, the research needed to be able to understand the social construction of ideas

in a single case context but needed a framework to deal with the nations of change inherent in 'strategy as practice'. Therefore it was considered that the most appropriate research method to use was Action Research. This research is conducted similarly by adopting a case study and telling a story by using Action Research as a method to guide the entire story.

3.3 Action Research

Action Research is an iterative process involving researchers and practitioners acting together on a particular cycle of activities, including problem diagnosis, action intervention, and reflective learning (Avison et al. 1999). Action Research explains the links amongst the key question of how the research generated knowledge that was both valid and crucial to the wellbeing of individuals, communities, and for the promotion of larger-scale democratic social change (Alcorn et al. 2011; Brydon-Miller et al. 2003). Action Research is a study through change and reflection by researchers and practitioners in an immediate problematic situation within a mutually acceptable ethical framework (Rosemann & Vessey 2008).

Action Research addressed complex real-life problems and the immediate concerns of practitioners (Rosemann & Vessey 2008). In Action Research, researchers and practitioners could work together, sharing a mutually acceptable ethical framework to solve a potential problem. Successful Action Research could align and solve the conflict between researchers and practitioners or amongst practitioners themselves (Avison et al. 1999). This research was conducted in a similar way, enabling tensions between the company, its clients and suppliers externally, and internally between the staff across the organisation.

Action Research encourages researchers to experiment through intervention and to reflect on the effects of their intervention and the implication of their theories (Avison et al. 1999). However, there were four different types or ways of achieving this experimentation and enabling the interventions as part of Action Research (Avison et al. 1999). These four types of Action Research are: 1) Action Research focused on change and reflection; 2) action science that tried to resolve conflicts between espoused and applied theories; 3) participatory Action Research that emphasised participant collaboration; and 4) action learning for programmed instruction and experiential learning. However, whilst each type of Action Research offered a valid form for research, researchers needed to be explicit about their approach, clarifying their research aim, theory, and method at the outset and all the way through its application, as well as at the time of its publication (Avison et al. 1999; Kock & Lau 2001).

This research was conducted based on the third type, which was participatory Action Research emphasising participant collaboration. The researcher learned from the participants and from the observation that the researcher participated in activities in the organisation. The researcher followed participants undertaking their activities at work and asked them relevant questions when he needed explanations of some activities to broaden his knowledge and to understand how some business improvement was possible in the context being studied.

Action Research enabled the researcher to learn from the participants and gain different perspectives from person to person, from time to time in each episode and through each iteration. Each participant had different views and perspectives when they provided information at their work premises. The cycle of activities involved in Action Research enabled the researcher to learn the developments and changes in the organisation and to then propose new processes for improvement in a new cycle. This cycle of activities in Action Research explains what happened in the development of a multi-view framework where tools and techniques were blended into a common approach. Each tool and technique was used on a contingency basis, which was appropriate for each problem situation (Rosemann & Vessey 2008). In this research that process involved observations, interviews, document analysis and discussion with stakeholders.

McNiff et al. (1996) explained that the term 'Action Research' was a form of practitioner research used to help researchers improve their professional practices in many different types of workplaces. Practitioner research simply means that individuals or practitioners undertake the research into their own practices. Under the practitioner research approach, well-conducted Action Research could lead to personal development, better professional practice, improvements in the institution in which the researcher worked, and, at a more esoteric level, could assist the researcher in making a contribution to the good order of society. The researcher then conducted this research by adopting Action Research to develop professional practice to the organisation.

According to Rothwell et al. (1995), Action Research was both a model and a process. Action Research as a model could be explained as it was a simplified representation of the complex activities that occurred in a change effort; it served as a roadmap to the practitioners. Action Research as a model involved methods and techniques to guide the researcher with their practice. Action Research as a process, according to French and Bell (1999, p. 130), 'is the process of systematically collecting research data about an ongoing system relative to some

objective, goal, or need of that system; feeding these data back into the system based both on the data and on hypotheses; and evaluating the results of action by collecting more data’.

Susman and Evered (1978) detail five phases in a cyclical process in Action Research. Their approach first required the establishment of a client-system infrastructure or research environment. Then, five identifiable phases were implemented: 1) diagnosing; 2) action planning; 3) action taking; 4) evaluating; and 5) specifying learning. These five processes explained clear areas of importance in the ideal form of Action Research, which was to create new or changed systems development methodologies. Studying new or changed methodologies implicitly involved the introduction of such changes, and was necessarily interventionist (Susman & Evered 1978). Cummings and Worley’s Action Research model (2001) includes the following eight steps which will were used in this research: 1) problem identification; 2) consultation with a behavioural science experts; 3) data gathering and preliminary diagnosis; 4) feedback to key client or group; 5) joint diagnosis of problem; 6) joint action planning; 7) action; and 8) data gathering after action. These processes were discussed similarly with other authors such as Avison et al. (1999), Susman and Evered (1978), and Shotter and Tsoukas (2011). However, a careful survey of the Action Research literature found widespread agreement by Action Researchers on four common characteristics, which included 1) an action and change orientation; 2) a problem focus; 3) an organic process involving systematic and sometimes iterative stages; and 4) collaboration among participants (Baskerville & Wood-Harper 1996; Peters & Robinson 1984). The researcher here aligned the Action Research used with Avison et al. (1999) to complete the Action Research processes.

Brydon-Miller et al. (2003) discussed an Action Research approach that was a participatory, democratic process concerned with developing practical knowing in the pursuit of worthwhile human purposes, grounded in a participatory worldview. It sought to bring together action and reflection, theory and practice, in participation with others. The crucial difference between Action Research and other forms of research was in the commitment of Action Researchers to bring about change as part of the research act (Brydon-Miller et al. 2003). The researcher also expected the change in similar direction, whilst expecting an improvement for the business operations. Brydon-Miller et al. (2003) also claimed that Action Research went beyond the notion that theory of Action Research could inform practice to a recognition that theory can generate through practice. And, as the earlier discussion of values would suggest, that theory was really only useful insofar as it was put in the service of a practice focused on achieving positive social change.

The principle of understanding Action Research explains the idea that the social world could only be understood by trying to change it (Alcorn et al. 2011; Zuber-Skerritt et al. 2012). Action Research rejected the notion of an objective, value-free approach to knowledge generation in favour of an explicitly political, socially engaged, and democratic practice. Shotter and Tsoukas (2011) stated that Action Research was succinct and the process of Action Research was a study into our ways of life that could not be conducted in the same, value-free way as in the natural sciences (Avison et al. 1999; Brydon-Miller et al. 2003; Shotter & Tsoukas 2011). This notion of the importance and value of Action Research was important to this research of a Fire Truck company because a business problem was identified that needed change through some form of intervention to enable resolution and improved business performance.

3.4 The Research Process

A research design explains how this research was conducted and the research processes are demonstrated in Figure 3.1 explaining each step to take place during this research. This research is divided into three cycles:

- cycle one was a review of the existing research literature. This was used to establish a research framework grounded in theory (Chapter 2) to develop a research strategy and to set the context for the research;
- cycle two was the application of Action Research through three cycles of change, process, evaluation and decision-making; with the researcher observing participants at work, getting involved with the participants at work, interviewing staff, the CEO, senior managers, suppliers upstream in the supply chain, and clients of the finished products;
- cycle three produced a summary of all phases built on the evaluations at the end of each cycle, on interviews with the owner and managers, and staff members, at CCC Company, Thailand.

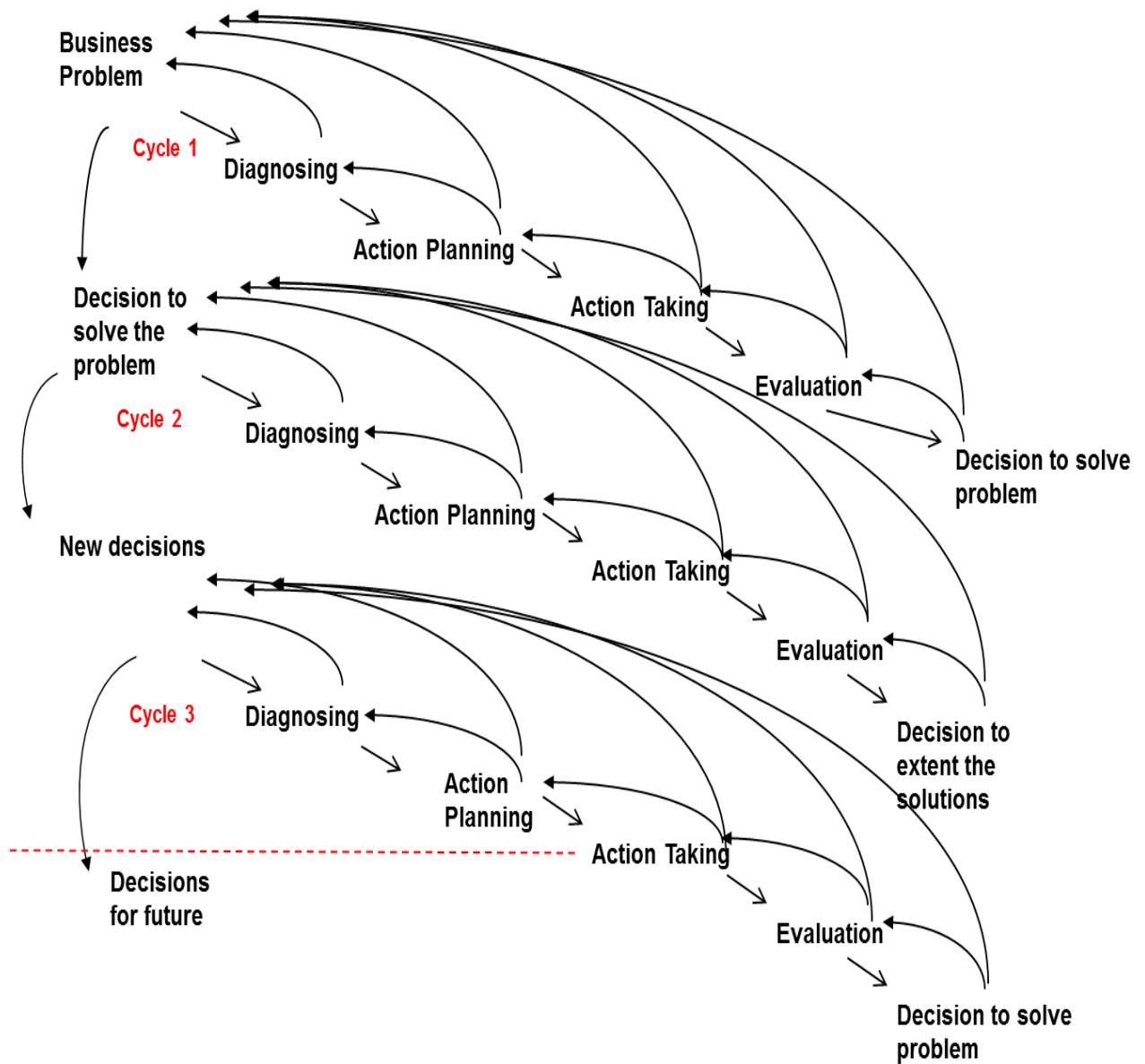


Figure 3-1: Action research cycles

Figure 3.1 demonstrated that the research started through Action Research cycles. Susman and Evered (1978) detailed five phases in a cyclical process in Action Research. The five phases of action research were undertaken through 1) diagnosing; 2) action planning; 3) action taking; 4) evaluating; and 5) specifying learning. The final phase of each cycle would lead to a decision to solve problems for the following cycle.

Throughout the research process, the researcher started from carrying out a study mainly through formal interviews, with no direct involvement in action in the field and providing feedback to the participants. Afterward, the researcher got involved with them in the organisation to observe and noted necessary information about working processes at their

premises. Being an observer at their premises, the researcher could see things in certain ways, and not others. However, the researcher observed working processes at one end of a spectrum as a 'neutral' observer. However, the researcher was an active participant in decisions about what change(s) had to be implemented in each cycle, in the evaluation in each cycle and in determination of what was to happen next. The Action Research process was planned and taken into three cycles as shown in Figure 3.2 below:

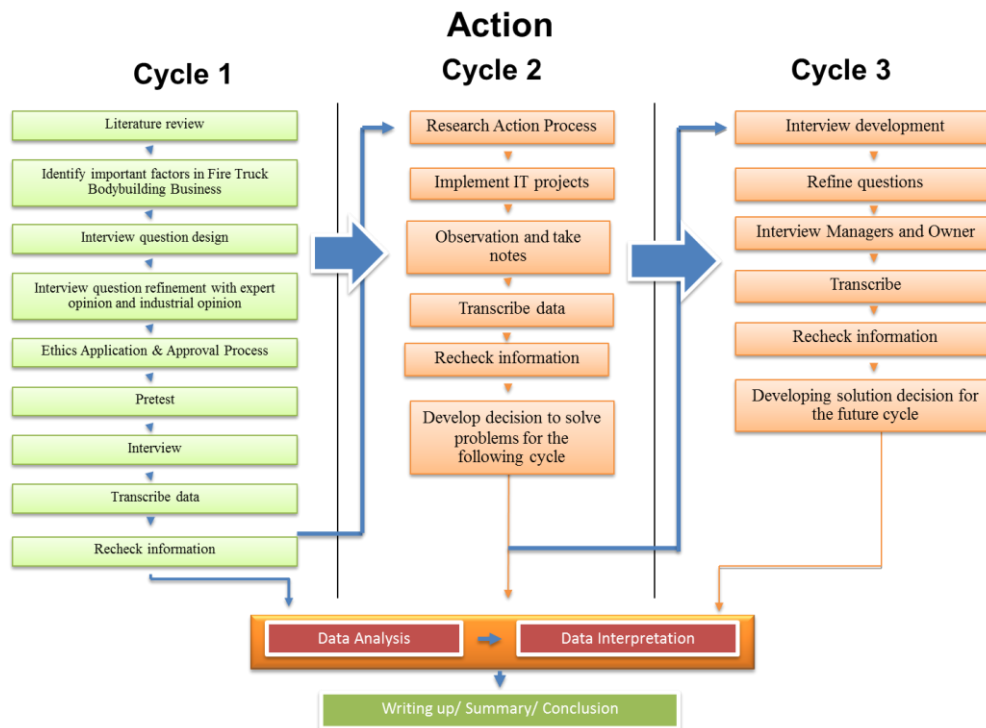


Figure 3-2: The research process

Research process: Cycle one

The research started with the exploration of what happened in the company and the researcher used observation and interviews with key people in the company [CEO and Operations Manager] to understand how current management practices impacted on work processes and related interactions with the supply chain within the Fire Truck business. A review of the existing research literature enabled the researcher to develop an understanding of the critical success factors in supply chain management in general. Undertaking interviews with these key personnel enabled the researcher to explore these issues at the CCC Company. This research was conducted in three phases to understand and find appropriate direction to an improved business performance. The intent was to understand what the business problem itself was and what ideas the CEO/owner had to resolve that problem.

The literature review assisted this research with establishing foundation knowledge and developing an understanding of factors that might impact on business performance in the relationships between the company and its supply chain. The knowledge from a review of literature led the researcher to align business practice with the academic literature in information systems and develop a framework about how the Fire Truck business could improve business quality performance (Chapter 2).

The literature and the research theoretical context model (Fig 2.7) were used to frame key questions to understand the existing operations of the company. These questions were semi-structured and were addressed to the key management staff and owners of the company [four persons].

The technique for gathering the data was semi-structured, face-to-face interviews. In-depth, semi-structured interviews offered researchers the flexibility to inquire into organisational and other contextual issues (Silverman 2004). An in-depth, semi-structured, interview was considered a common data collection instrument in qualitative research and exploratory research, where the researcher sought to obtain a deep understanding of the topic and intends to develop theories or hypothesis rather than testing them (Creswell 2008). In this phase, semi-structured interviews were used to collect data from the business owner, managers and staff members to gain insight into the participants' current constructions of their feelings, motivations, work system, business process concerns, their reconstructions of past collaborative experiences at the CCC Company, and their projections of collaborations in the future (Given, L 2008).

Patton (2002, p. 341) claims that, 'the purpose of interviewing, then, is to allow us to enter the other person's perspective'. This is to generate insights into the business owner's or managers' perspectives about technology and innovation in the organisation, how they operated the business, and to seek new dimensions of the study (Neuman 2005; Patton 2002).

A pretest of interview questions (Silverman 2006) was undertaken prior to the interviews taking place. The researcher sought expert opinions to ensure that interview questions were appropriate and easy to understand (Given 2008; Patton 2002). The researcher sought expert opinions from academics by sending the interview questions to seek opinions from three professors in Australia and three professors in Thailand. Three pretest interviews were conducted with staff members, who were not target interviewees, at the CCC Company in March 2009 to learn whether they had a clear understanding of all questions. Then, only minor

changes were made to improve the interview questions. Ethics approval was obtained prior to the data collection process being undertaken.

These interviews were aimed at assisting the researcher to learn about current processes and about problems in management in the supply chain. The interviews were conducted in Thai as the participants were Thai and used Thai as the main language at their organisation. These interviews were digitally recorded with the interviewees' permissions to learn information in detail. The researcher then used data derived from interviews for coding then transcribed each interview. The researcher took notes during the interviews. The researcher used his knowledge and the interviewees' knowledge to construct a picture of current practices. This was then transcribed and checked with the interviewees to ensure that the contexts of the interviewees properly represented what they said. This was important because it was against this that changes would be attributed when IT projects and policy development were introduced into the process in a number of Action Research cycles.

The process of transcribing the interviews assisted the researcher in many ways, such as to remind the researcher to understand the context of the interviews when reviewing the interview transcripts and moving onto the next parts of the research cycles. The interviews had small lost some of the context as the researcher tried to capture the wording used during the interviews and understand them in the way that the participants explained. In cases where the researcher did not understand some context during the interviews, the researcher raised queries to ensure his immediate understanding.

In this first cycle the researcher visited the CCC Company. The CCC Company was helpful and provided extensive cooperation for the research. The CCC Company business owner recruited the participants for this research. It required time to ensure that the participants acknowledged the contact by the researcher from the business owner. The business owner at the CCC Company contacted the researcher within three days to ensure that all participants acknowledged that they agreed to be contacted by the researcher for an interview. A sample of the interview questions was left with the business owner as a guide for each interviewee to understand the concept and types of questions together with the purpose of this study and plain language statement and a letter introducing the researcher. The original copies were presented on site again to each participant when interviewed. A consent form was also signed prior to each interview commencing.

In the interview process, the researcher visited the interviewees on their premises to demonstrate the researcher's willingness to learn information from them as well as make it convenient for the interviewees at their own premises. The researcher used about five minutes to talk with each interviewee to make them feel comfortable before each interview began. Each interview took about 45 minutes to one hour.

In this initial cycle, three main informants: Mr ST, Mr TN and Mr RJ plus the CEO were used to identify the critical business issues that needed to be addressed. At this initial stage, the researcher only discussed issues with the main informants, but the researcher also had a chance to have a small conversation with Ms Sara who was a trader - being the customer and the supplier for the CCC Company. Ms Sara worked for the ITC Company, a trader of the company that had 25 years of experience in the trading business and had been in business as a major supplier and customer with the CCC Company for more than 20 years. Ms Sara visited the CCC Company by chance and the three main informants introduced the researcher to Ms Sara. The business owner did not want the researcher to interfere with customers and suppliers of the company due to reasons of information and confidentiality of the company. However, the CEO still provided a consent to the researcher to have conversation and small interview with Ms Sara at this time. The researcher followed the senior managers and senior staff members to meet their customers and had a small discussion regarding the information sharing issue. These key informants were working as managers and were senior staff members at the CCC Company.

- Mr ST has thirteen years experience with CCC Company. He is Head of the International Trade department.
- Mr TN joined the CCC Company in the last six years [2005]. Mr TN, an accountant, had no background at all in the Fire Truck business.
- Mr RJ has 30 years in project management and joined the CCC Company in the year 2008 as a consultant. The company already had plans to expand the business size and step up into multinational business trading with customers and suppliers from various countries throughout the world such as Europe, Scandinavia, Australia, America, and Asian countries. It was his responsibility to work with the CEO to achieve this.

Appointments for interviews were scheduled and developed as demonstrated in Table 3.2.

Table 3-2: Schedule of appointments for interviews

Date	Name	Description
Second week of May 2009	Mr ST, The International Trade Manager	Preliminary discussion, took place at the CCC Company
	Mr TN, The Support Manager	
	Mr RJ, The IT Manager	
	CCC Company	
Second week of May 2009	Ms Sara, Customer and Trader ITC Company	Preliminary and small discussion, took place at the CCC Company with Mr ST, Mr TN, and Mr RJ (Senior Managers)
First week of June 2009	Mr ST, The International Trade Manager	Interview, took place at the CCC Company
	CCC Company	
Second week of June 2009	Mr TN, The Support Manager	Interview, took place at the CCC Company
	Mr RJ, The IT Manager	
	CCC Company	

The data collected in cycle 1 was first summarised and then condensed into a statement of the business issues the company was trying to resolve as part of developing strategy. This was then given to the CEO and senior managers for them to make a decision, in collaboration with the researcher, about what would be the next step. The key decisions taken by the CEO, senior managers and the researcher as participant included sixteen IT projects to support the fast growth of the CCC Company. The details of the projects are presented in Table 3.3.

Table 3-3: IT Projects at CCC Company phase 1 for the year 2009 – 2011

IT Projects Development	Implementation
1. Network Development in Main Office (WAN, LAN, and Wireless System)	Phase 1
2. Network Development in Factory (WAN, LAN, and Wireless System)	Phase 2
3. Connectivity of networking between main office and factory	Phase 3
4. Internet system via WAN, LAN, and Wireless System	Phase 1
5. Database Management System	Phase 1

6. Website Development for Main Office	Phase 2 and 3
7. Website Development for Factory	Phase 2 and 3
8. Website Development for Museum	Phase 2 and 3
9. ERP system development	Phase 3
10. Finger scan systems	Phase 2
11. CCTV system	Phase 3
12. PABX telephone system	Phase 2
13. IT regulation manual for staff members	Phase 2 and 3
14. E-mail system	Phase 2
15. Intranet system development	Phase 2
16. Needs assessment for IT tools and equipment	Phase 1 and 2

Project One, Project Four, and Project Five were chosen for the 2009 – 2011 IT development plans. The decision and the planning that followed, including evaluation of alternatives, led into the next cycle.

Research process: Cycle two

After the decisions were made at the end of cycle 1 the CEO owner made a decision that all of the current work processes, orderings and delivery systems would be changed and an IT-based process be introduced into business processes. These IT systems were to be planned and designed with the CEO to try and improve management of the supply chain in the organisation. There was then a hiatus in the process while the IT system was planned, purchased, set up and tested before implementation. It took about two weeks to finalise the needs of staff members at the CCC Company and propose the IT projects to the business owner. The process of installing the hardware and software took about one and a half months to complete as they needed to order, check specifications of models ordered from suppliers, and evaluate the performance of the computers after the purchases.

After four weeks of implementation, the second AR cycle started and was then left to run for four weeks. The system was in place for three months and the researcher observed the changes in the organisation, whilst the observation was regularly undertaken to understand the changes. At that stage, the researcher began an interview process with each staff member

impacted by the introduction of the IT, and with suppliers and clients. The questions focused on process improvement, development of new workflows, and perceptions of quality improvement and perceptions of effects on the efficiency of the supply chain. The same group of participants who were interviewed in Cycle 1 were again the subjects to maintain an accuracy of information provided by them during this study.

Following (Bridges 2003), in Action Research it is necessary to collect data about the impact that the changes, in this study the implementation of IT, had on the management of the supply chain and the quality processes in place in that management. Qualitative methods are often used as a research method to collect additional information mostly by utilising semi-structured face-to-face interviews as the key technique. Sparrow (1999) suggested that many studies used qualitative research approaches to consider the ways that particular sets of practitioners may categorise their business world. Sparrow (1999) further explained that basic quantitative indicators of business performance and measures of client satisfaction failed to generate sufficient insights into client needs or the effectiveness of client support. In addition, there was a need to get closer to the world of business owner-managers, to identify how the managers or owner of the business can be best facilitated to develop their practices (Chambers 2011; Sparrow 1999). Using Action Research and semi-structured interviews enabled the researcher to gain the richness Sparrow claimed was often lost.

The challenge of the qualitative research was that the researcher had to demonstrate interest in doing research with no bias on the study. Marshall and Rossman (2006) claimed that a sensitive awareness of the methodological literature about the self in conducting inquiry, interpreting data, and constructing the final narrative helped; so did knowledge of the epistemological debate about what constituted knowledge and knowledge claims, assisted in understanding the self-perspective. This was very important in this study as the researcher followed staff members when they worked in the organisation being studied. It was essential for the researcher to consider his position and was able to report what each interviewee meant to avoid imposing his own bias in the process. In essence the researcher in qualitative research like this cannot avoid some form of bias but following Corbitt (1997), who undertook research about an organisation he too worked in, it was important to keep checking interpretation with the research participants to ensure it was their meaning that was reported. That was done throughout all three cycles in this research.

In this second cycle, the researcher again undertook the observations, interviews and document analysis at the premises to learn how staff members worked in the organisation.

Observations were undertaken during their work at their premises and questions were used as a research tool to ask them for clarification of some situations. In the observation process, the researcher worked and followed with participants. The researcher worked with participants in the period of nine months started from July 2009 to March 2010. At the beginning, some staff members were not helpful and felt uncomfortable because the researcher was new to the organisation. Some staff member even felt that the researcher was sent to investigate they worked. However, they got acquainted with the researcher at later time. In many cases, staff member were busy at work and did not have sufficient time to answer and to discuss with the researcher. The researcher had to seek appropriate time and way to talk and discuss with staff members at the CCC premise. The participants were helpful and did not feel uncomfortable to provide information when they were asked. They provided cooperation with the researcher and were thankful when the researcher provided assistance for their needs. In this second cycle, the researcher studied if the requirements, set by the senior managers, CEO, staff and suppliers and clients in the first cycle, were met with the new IT Projects.

In the second cycle, the owner and senior managers were contacted as well as employees at the CCC Company by personal connection, as the researcher knew senior managers for more than ten years and they introduced the researcher to the CEO. Participation was again voluntary and prospective interviewees were always given the opportunity to withdraw at any time. In this cycle, participants were asked to make their own assessment of the impact of the changes derived from the IT systems on their work and on the quality factors the organisation used to determine the quality of its services upstream and downstream in its supply chain. Interviews were conducted over a range of roles in the company, which included the business owner, managers, key decision makers, and key employees. Some participants were interviewed multiple times. Often these extra interviews arose from periods of observation of the people involved by the researcher. The interviewees were asked to think retrospectively regarding the details of business conditions, implementation tasks, and performance in the organisation. In addition, the interviewees were asked to supply examples and other supporting evidence to illustrate their arguments.

In the second cycle, thirteen people were interviewed. The interviewees were selected according to various criteria. In this business, there was only one owner, 20 employees in the Sales department and Purchasing department, and four major suppliers of the business. All had to be represented in the proposed changes and in the data collected. In the interview process, the researcher might lose some precious interview time, but the researcher found the interviews succeeded in the interview purpose of getting participants to relax. Hence, the

researcher could gain a higher quality of interview, in terms of the honesty of responses (Walsham 2006). Table 3.4 lists the participants in the second cycle and their roles.

Table 3-4: List of staff members participating in cycle 2 of this research

Departments	Name	Descriptions
Managers	Mr RJ	Worked as General Manager. He joined the business in 2009.
	Mr ST	Worked as Manager. He joined the business in 1998.
	Mr TN	Worked as Manager. He joined the business in 2005.
IT	Mr Nat	Worked in IT department and provided IT support to all staff members at the CCC Company. He started his career at the CCC Company in 2005.
International sales	Mr Chai	Recently joined the CCC Company in 2007 and started his career in the international sales department.
	Ms Wi	Recently joined the CCC Company in 2007 and started her career in the international sales department.
Procurement	Ms Bee	Started her career in the procurement department in the year 2000. Her duties mainly revolved around international procurement.
	Ms Joop	Started her career in the procurement department in the year 2002 and assisted Ms Bee. Her duties mainly involved international procurement.
	Ms Nick	Recently joined the CCC Company in 2006 and assisted Ms Bee and Ms Joop in international procurement.
Domestic sales	Mr Oh	Joined the CCC Company in the year 2005 and was involved in domestic sales. His major customers were in government sector, such as local community.
	Ms Fon	Joined the CCC Company in the year 2005 and was involved in domestic sales. Her major customers were private enterprises. She worked with Ms Ple.
	Ms Ple	Joined the CCC Company in the year 2003 and was involved in domestic sales. Her major customers were private enterprises in Thailand.
Finance	Ms Nid	Worked in the financial department since 1998 and her main duty was as a financial controller to the CCC Company.

The interviews were conducted between June 2009 and January 2010 in Thailand. The interviews took place in a location that was flexible and relaxing for the interviewees at their work premises. Working with them at their premises demonstrated the researcher's willingness to gain information from them as well as to make it convenient for the interviewees. Prior to the interviews, the interviewees were again asked for consent for the interview and consent to be audio-recorded. The letters seeking their cooperation with the

study and consent forms were sent to the participants. The permission to interview was granted by the participants' superiors then appointments for the interviews were made prior to the interviews taking place. Detailed notes were also made during the interviews by the researcher. Each interview again lasted between forty minutes and one hour.

The questions in the interviews were a set of open-ended questions. The questions were structured and each question aimed to derive different answers (Oppenheim 1998). The in-depth interviews were conducted with key informants in the organisation such as owners, managers, sales people, suppliers and the major customers. The questions asked included:

1. How could the computer system facilitate your work in the company?
2. Have you shared information with other staff members within the organisation? Explain how and why?
3. What do you think about information sharing in the company?
4. Do you communicate with other staff members effectively? How?
5. Could you compare the information sharing process previously and at present? Then explain how they were different, if they were different?
6. What did you see about business improvement after implementing the IT projects in the organisation?
7. Do you agree that IT could help facilitate your work after all? Explain how and then why?
8. How do you think that IT could impact your work environment?

All staff members in the company participated in the new changes within the organisation and they all had to participate with and in all of the IT projects. Staff members in different departments perceived the changes with a different perspective so it was important to cover all of the staff involved.

Following the expected practices of Action Research, the researcher transcribed the interviews, and verified them with the participants. The researcher then used those transcripts to describe what happened and began to undertake an evaluation firstly just using the data and then in collaboration with the CEO/Owner and senior managers. As a result of the evaluation, the group made decisions about what would happen in the next cycle of implementation.

Research process: Cycle three

Following the evaluation of the outcomes and evaluation of the second cycle, and after discussions lasting four months, the company introduced some new systems to improve the effects of the IT projects. In the first month of the second cycle IT projects, many staff members were uncomfortable about storing the information from their department in the company's database. The IT Project Manager and the IT staff members had tried to educate other staff members and provide training for them to understand how the data were secured in the system and how they were authorised to retrieve the information. Eventually this succeeded.

In Cycle 3 the CEO, senior managers and researcher planned a process of improved training, better policy for the company and a process to improve domain knowledge in the company. The outcome was a more expansive training program, a clearer IT policy for the company and improved knowledge and information sharing in the company and along the supply chain, both upstream and downstream.

The third cycle happened over a period of four weeks in February 2010 and included interviews, observation with the researcher embedded in the company, and further document analysis. The following people were involved, again covering all those deemed necessary to understand the full impact of the changes (Table 3.5):

Table 3-5: List of people who were involved in the third cycle

Departments	Name	Descriptions
Managers	Mr RJ	Worked as General Manager. He joined the business in 2009.
	Mr ST	Worked as Manager. He joined the business in 1998.
	Mr TN	Worked as Manager. He joined the business in 2004.
IT	Mr Nat	<ul style="list-style-type: none"> Followed whilst on duty Asked questions regarding the IT improvement process within the organisation and queries about changes after the introduction of IT within the organisation from the perspective of the IT department
International sales	Mr Chai	<ul style="list-style-type: none"> Followed whilst on duty Asked questions regarding the IT improvement process within the organisation and queries about changes after the introduction of IT within the organisation from the perspective of the IT department

	Ms Wi	<ul style="list-style-type: none"> • Followed whilst on duty • Asked questions regarding the IT improvement process within the organisation and queries about changes after the introduction of IT within the organisation from the perspective of the IT department
Procurement	Ms Bee	<ul style="list-style-type: none"> • Followed whilst on duty • Asked questions regarding the IT improvement process within the organisation and queries about changes after the introduction of IT within the organisation from the perspective of the IT department
	Ms Joop	<ul style="list-style-type: none"> • Followed whilst on duty • Asked questions regarding the IT improvement process within the organisation and queries about changes after the introduction of IT within the organisation from the perspective of the IT department
	Ms Nick	<ul style="list-style-type: none"> • Followed whilst on duty • Asked questions regarding the IT improvement process within the organisation and queries about changes after the introduction of IT within the organisation from the perspective of the IT department
Domestic sales	Mr Oh	<ul style="list-style-type: none"> • Followed whilst on duty • Asked questions regarding the IT improvement process within the organisation and queries about changes after the introduction of IT within the organisation from the perspective of the IT department
	Ms Fon	<ul style="list-style-type: none"> • Followed whilst on duty • Asked questions regarding the IT improvement process within the organisation and queries about changes after the introduction of IT within the organisation from the perspective of the IT department
	Ms Ple	<ul style="list-style-type: none"> • Followed whilst on duty • Asked questions regarding the IT improvement process within the organisation and queries about changes after the introduction of IT within the organisation from the perspective of the IT department
Finance	Ms Nid	<ul style="list-style-type: none"> • Followed whilst on duty • Asked questions regarding the IT improvement process within the organisation and queries about changes after the introduction of IT within the organisation from the perspective of the IT department

The following questions were constructed from the analysis and decisions made from Cycle 2 and used as part of the data collection process in Cycle 3.

1. Do you think that IT could help facilitate your work in the organisation? How? Please explain.
2. How does IT impact your work process?
3. Has the company provided sufficient support for IT learning at the organisation?
4. Do you think that IT facilities and equipment that the company provided were sufficient? Why and How?
5. What do you think you need from the company to support your work after the introduction of IT (hardware, software and the Internet).
6. Do you think that you need IT training? Why?
7. What kind of training should you require to improve your computer or IT skills? Why?

In summary the cycles of Action Research used in this research are detailed in Figure 3.3 below.

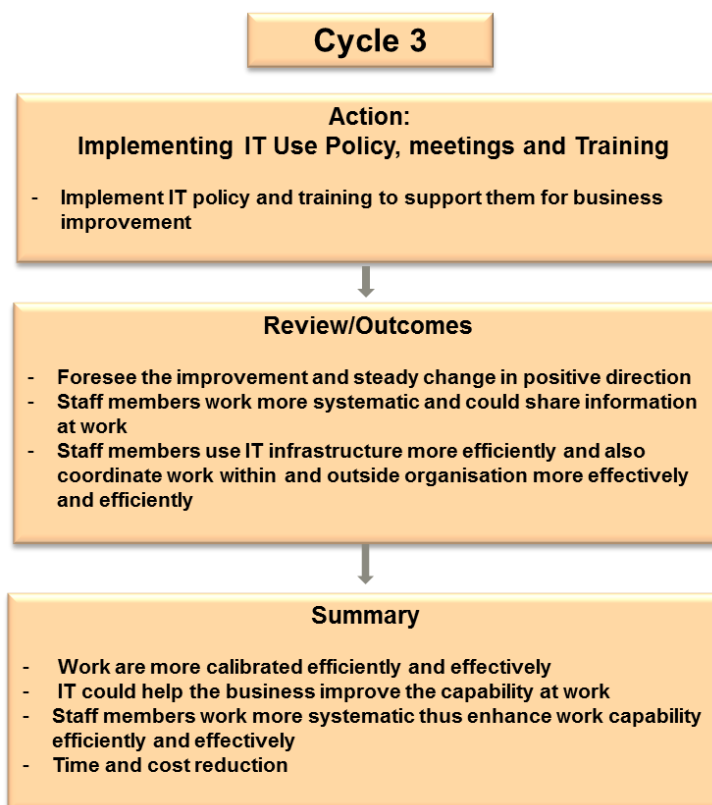


Figure 3-3: The Action Cycle 3 for IT projects in the CCC Company

The following section discusses how data analysis was undertaken in this research.

3.5 Data Analysis

The process of data analysis is eclectic (Creswell 2008). Using (McGrath 2005), the researcher had to deal with interpretations of data providing insights arising from a hermeneutic understanding, and from engaging the social world of the company and its supply chain (Alvesson & Deetz 2000). McGrath (2005) suggested that interpretive work was no more than an interpretation unless it had limited critique. One form of a limited critique would question whether an outcome increasing managerial control was desirable to all (McGrath 2005). In essence this approach had to be considered in the ways the research took the evaluations of data from those involved in the research cycles and made sense of them, understanding that the entire project was driven by and implemented because of decisions made by the company CEO. Within the 'strategy as practice' theoretical framework, it was essential to understand this impact as company owner/CEO could impose decisions and staff could accept or re-contextualise them to their own purpose. In the analysis of data it was important for the researcher to be able to make this evaluation.

Data analysis techniques helped the researcher to summarise the large amount of data and to understand the effects of a number of variables on final outcome. Data analysis techniques also helped the researcher to minimise the confounding effects inherent in most data collection process. In addition, data analysis techniques enabled the researcher to assess the effects of alternative future scenarios (Sachan & Datta 2005). Walsham (2001) developed in-depth field studies to raise awareness of the world differences. He complemented a critique arguing that there were aspects of a multicultural world that were unacceptable (Walsham 2001). Walsham's study can be used to explain the difference between interpretive and interpretation; that interpretive required at least a limited critique. Data analysis required that the researcher be comfortable with developing categories and making comparisons and contrasts (Chambers 2011; Creswell 2008; Patton, M 2002). Creswell (1994, 2007, 2008) suggested that the researcher be open to possibilities and see contrary or alternative explanations for the findings. In this data analysis process, the researcher took a voluminous amount of information and reduced it to certain patterns, categories, or themes and then interpreted this information by using some schema.

Patton (2002) suggested that the themes, patterns, understandings, and insights that emerged from fieldwork and subsequent analysis were the fruit of qualitative inquiry. Data from the interviews were transcribed and rechecked for correction by the researcher (Patton, M 2002; Riessman 2003). Since the interviews were conducted in Thai the transcripts were translated

into English and analysed by the researcher. The interviews were also compared with other interviews and documents from the same organisation (Eisenhardt 1989). The first, and major step, in analysing qualitative data comprised coding data techniques to screen various common process problems. Then each factor in the work system framework was identified into meaningful categories, which the researcher had to identify and describe themes, patterns and concepts, then organised them into meaningful categories to be able to understand and explained these themes, patterns or concepts into a meaningful format (Miles & Huberman 1999; Riessman 2003). Each transcript was coded and cross-referenced to the factors in the structure of the study framework to enable content analysis of all the factors across the CCC Company and interviewees.

This research used the narrative method as narrative research is a promising approach for gaining an in-depth understanding of people's lives (Riessman & Quinney 2005). The term 'narrative' carries many meanings and is used in a variety of ways by different disciplines, but often it is synonymous with the term 'story'. As in all stories, multiple voices and identities come into play (Larsson & Sjoblom 2009). Narrative has energised many fields in social sciences such as in social movements, organisations, politics and other macro-level processes (Riessman & Quinney 2005). Individuals construct stories of experience, nations, governments and organisations construct preferred narratives about themselves. Narrative analysis takes the perspective of the teller. When telling a story, tellers were people who were listeners to the stories in the past, recapitulated what happened then, and there is always the marking of the moral point in the telling of the story (Riessman 2003).

Narrative methods could be used as a methodological tool when conducting research in social work practice (Riessman & Quinney 2005). In this research, the story is related more to the background of the business than the individual experience of participants. Riessman (2003) also suggested that a person telling a story to a researcher was not only reporting on a set of events in a simple way, but also imparting knowledge about how the story evolved. In this case, the researcher and people telling the stories can be seen as doing a narrative co-production (Larsson & Sjoblom 2009). In telling the stories, meaning was transferred through these several different levels. 'What' someone says (identical) is connected to 'how' something is said (textual) and to 'whom' it is said (interpersonal) (Riessman 2003). The social context (Babbie 2007) was important in the process of understanding the meaning of the narrative because narrative studies opened up different forms of telling about the experience.

Narrative thinking generated from the research report was a narrative story. Narrative thinking was a researcher's virtue to be aware of how a researcher produces reality, and how to explicate the personal process of knowing of the researcher in the text (Heikkinen et al. 2007). Therefore, the process of writing a story of a social process, such as an Action Research, was difficult even to imagine relating the story that was true in terms of correspondence. According to Lieblich et al. (1998), classification and organisation of types of narrative analysis was presented into two dimensions. The first type of narrative analysis was holistic versus the categorical approach. This approach was appropriate when the researcher was interested in a phenomenon shared by a group of individuals or when the researcher tried to understand the person as a whole (Lieblich et al. 1998). The second type of narrative analysis was about content versus form. In the second type of narrative analysis, it was about the explicit content of an account and the structure of the plot. In combination, the explicit content of an account and the structure of the plot aspects could be a good strategy in this second type of narrative analysis (Clandinin 2007; Lieblich et al. 1998). Riessman (2003) suggested that personal narratives did not reveal the past as it actually was. Instead, they gave us the truth of experiences that were neither open to proof nor self-evident, and could only be understood through interpretation, by paying careful attention to the context that shaped them.

According to Patton (2002, p. 5), '... the themes, patterns, understandings, and insights that emerge from fieldwork and subsequent analysis are the fruit of qualitative inquiry'. Following analysis of themes and translation into English, the information was sorted following (Miles & Huberman 1994), into meaningful categories to be able to understand and explain the themes, patterns or concepts. In this research, the research framework derived in the literature review initially guided the themes. The researcher accepted that unexpected themes would most probably arise and become part of the analysis.

This study used an analytical technique of taking the literature and applying that to the collected data. From the judgments that were made on the data and the referrals that were also made to the literature to substantiate the author's personal judgment, this technique was defined as 'hermeneutics' (Gadamer & Linge 2008; Thanasankit, T 1999). The Hermeneutic Cycle of analysing data is presented below in Figure 3.4.

The Hermeneutic Cycle

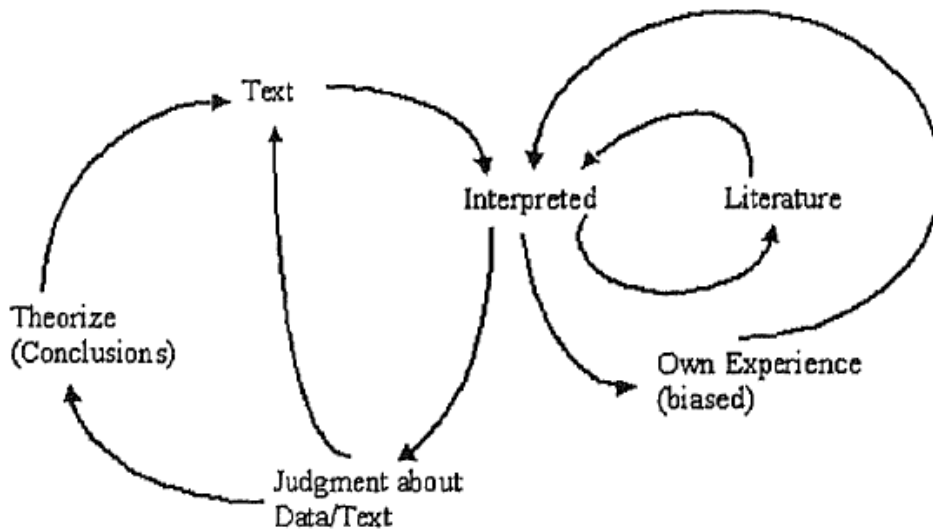


Figure 3-4: The Hermeneutic Cycle

Source: Thanasankit (1999)

Gadamer and Linge (2008) believed that understanding and interpretation were bound together and interpretation was an evolving process. This interpretive process was achieved through a hermeneutic cycle, which moved from past experience to the whole of experience to understand in-depth the texts that were interpreted (Thanasankit, T. 1999). The hermeneutic cycle was then used in the interpretive research approach and explored the meaning of texts and social world that influenced the business and industry presented in Figure 3.3. Again the conceptual requirements of ‘strategy as practice’ required an informed cyclical analysis that reflected the iterative nature of strategy and its decisions within an organisation.

Yin (2008), stressed that case studies did not provide statistical generalisation and the number of cases studied was also not relevant for statistical generalisation; cases studied looked for analytical generalisation and the investigator or researcher was the person to generalise a particular set of results to some broader theory.

3.6 Issues of Validity and Credibility

Since the narrative research was the study of the story, they were ubiquitous, and appeared as historical accounts, as fictional novels, as fairy tales, as autobiographies, and other genres (Polkinghorne 2007). Each participant that participated in this research told stories in this research. The participants told their stories about themselves and their work responsibilities as part of their daily lives. The stories were obtained from the participants undertaken by various

academic disciplines including literary criticism, philosophy, organisational theory, and social science. Narrative research undertakes their inquiries to have something to say to their readers about the human condition. Hence, the issue of validity is approached by applying one's own community's protocols about what, in its view, is acceptable evidence and appropriate analysis to the other community's research. In these cases, some of the validity in the community's research was lacking in support for its knowledge claims (Polkinghorne 2007).

Validity is not inherent in a claim but is a characteristic given to a claim by the ones to whom the claim is addressed. For judgments about the validity of knowledge claims to have scientific merit, they must be based on the weight of the evidence and argument offered in support of a statement or knowledge claim. Applying protocols on a study of research is acceptable evidence and appropriate analysis to the other community's research approaches the issue of validity of information derived from the data collection process. Also, different kinds of knowledge claims require different kinds of evidence and argument to convince readers that the claim was valid (Polkinghorne 2007). Polkinghorne (2007) claimed that a degree of validity or confidence was given to a claim proportionate to the strength and power of the argument used by a researcher to solicit readers' commitments to it.

There were two forms of validity in case study research: internal and external validity (Babbie 2007). In internal validity, the business owner at CCC Company introduced ten participants, and eleven cases were analysed. In external validity, the pragmatic trial sought to maximise external validity to ensure that the results could be generalised (Godwin et al. 2003). Therefore, the external validity was based on theories and previous studies that provided substantial knowledge for the researcher to compare with the findings from the interviews, set within the concept of 'strategy as practice'.

The researcher attempted to familiarise himself with the participants, and speak with each participant in the terminology that each participant would be familiar with, such as information technology, information and organisational culture. Interviews were conducted at their premises and at their convenience and appointments for interviews were organised in advance in cycle one. However, in phase two, the researcher was already familiar with each participant so that each participant felt comfortable to provide information and discuss various issues within the CCC Company. The environment for interviews was comfortable and the participants felt relaxed and comfortable to participate in interviews.

Given (2008) suggested that reliability referred to the degree of trust placed in the accuracy and consistency of the findings, which could be tested and confirmed by repeating the data collection method at varying times and with different researchers and respondents. In this research, the respondents referred to the business owners and managers, and the staff members at the CCC Company. Therefore, a set of procedures were developed and constructed to be available and enable future researchers who were interested in the same area or topic to study further or replicate the results. Two types of consistencies were used to explain the reliability of research: internal consistency and external consistency. Internal consistency in this study was concerned with minimising errors and biases of the researcher during the interviews when interviewing the business owner and managers, and staff members at the CCC Company, and ensuring that the given story fits into a coherent framework. By the time the researcher finished all interviews, the researcher was able to recount the story of their work system as well as factors leading to improved business quality due to the consistency provided by each participant. This process promoted consistency in the research process and served to identify, and subsequently decrease, the bias of any particular team member involved in the research (Given, LM 2008).

External consistency referred to the ability of the researcher to crosscheck the information provided by the participants in the interviews. This process was accomplished by enlisting the assistance of other business owners in the same industry to verify the information given by other participants in the same industry.

A conclusion is valid when there is sufficient evidence and/or reasons to reasonably believe it is so. In terms of validity in narrative research, the principle of workability, which is that rooted deep in the pragmatist tradition of Action Research, was added in: 'it is true because it is useful' (Heikkinen et al. 2007, p.8). In 'strategy as practice' the need to understand the strategy process in detail and as a process, rather than product, required the researcher to seek out from the participants what was useful to them and what was useful to the achievement of the needs and objectives established at the start of the process.

3.7 Summary

This chapter outlined the research methodology and approach utilised in this research. A qualitative approach was adopted using social theory within a context of 'strategy as practice' because qualitative research can provide a rich meaning and lead to a complete understanding of the research being conducted, in this study in a Fire Truck business. This research used an

interpretative approach (Andrade 2009; Maggs-Rapport 2008; Walsham 2006) where the researcher reported on what was being researched and offered explanations from the study based in social theories and extensive literature being reviewed. The findings informed factors that led to business performance improvement in the supply chain of the CCC Company.

The practical experience from the participants explained in different aspects contributed to an understanding of processes and practices that led to the improved performance of the organisation. The informed views of the participants enriched the research and allowed the researcher an opportunity to get a deep insight into the problem under study because the explanation of the participants' aspects and points of views was documented and translated into a form that was intelligible to readers (Creswell 2008; Neuman 2005).

Data was analysed using content analysis; by identifying themes or patterns that emerged from core meanings through content analysis. While themes usually took a more categorical or topical form, patterns usually referred to descriptive findings (Patton, MQ 2002). Data was coded into many themes focused on technology and innovation to best suit the appropriate unit of analysis (Huberman & Miles 2002). Data was analysed using a combination of thematic approach and narrative analysis because the information focus had been on understanding language, communication and meaning among systems developers and organisational members. In recent years, narrative, metaphor and symbolic analysis has become a regular theme in this type of study. In the analytical part, the researcher digitally recorded interviews, carefully transcribed each interview into documents, and translated them into meaningful academic information. The analysis process was coded into many categories and developed into themes.

The next chapter will discuss cycle 1 in the Thai Fire Truck business, further establishing the context of research as well as telling the story of the business process, business strategy, and operations in the Fire Truck business.

Chapter 4

ACTION RESEARCH CYCLE 1 – PRELIMINARY

ANALYSIS

4.1 Introduction

This chapter reports on the preliminary stages of Action Research activities that were implemented within the Thai fire truck manufacturer, the CCC Company. This preliminary research was undertaken at the request of the CEO of CCC, who was dissatisfied with growth in the company and was concerned that the work processes being used were inefficient and this was affecting relationships in the supply chain. Through various ad hoc meetings, the CEO approached the researcher to begin a process of looking at the company's problems and to see if a solution was possible. At this stage the researcher made contact with Prof Brian Corbitt at RMIT University, a contact set up through other professional associations, to see what possibilities there were to resolve the problems. It was on his suggestion that the research process began as a PhD study. Following this decision, the researcher went through the process of establishing the research set up, proposal, writing a literature review and beginning discussions with his supervisors about the best possible methods to use to resolve the problems. After nine months, the decision was made, based on some initial interviews in the company, to adopt an action research approach trialling different IT interventions in a series of cycles over a twelve-month period. The first stage of that process involved development of an understanding of the problems and their effects as they existed at the start using an action research approach of investigation, review, analysis and review and ultimately

decisions were made at the end of the cycle for the first set of interventions. This chapter reports the first cycle as change parts/interventions research.

The Action Research cycles are recounted in this thesis as both narrative and stories and as analytical outcomes. The thesis as a whole recounts a story of a problem and the changes that happened through interventions by the researcher, in collaboration with the CEO and his senior managers, and offers an analysis of the process based on the ideas of ‘strategy as practice’.

The research started with the CEO and researcher looking at the problems and the researcher conducting preliminary interviews with senior managers. The CEO and senior managers all had a clear understanding of what they thought the problem in CCC was – poor internal working processes affecting relationships up and down the supply chain. Even at this initial stage the CEO was of a view that a solution to the problems the company faced could be provided by IT. However, he had no idea how and in what way.

This chapter focuses on understanding the problems. The researcher uses the Action Research methodology to understand how staff members in the company worked and how they used the limited IT available to them. The investigation of their work processes was made based on the needs identified by the business owner/CEO to try and understand the apparent inefficiency of information flows along the supply chain of the business. The business owner firstly thought it was because of a lack of communication amongst the stakeholders along the fire truck supply chain. He realised later that it was in fact derived from the inefficiency of information in the operations within the organisation itself.

In this and subsequent chapters, each company participant has a pseudonym created, to keep his or her name and workplace confidential. Organisation names and people that might be involved in this research were also not disclosed to keep their confidentiality.

4.2 Preliminary investigation session

The researcher had prior contact with the CEO to discuss this research and explain to him the potential business improvement. The CEO advised the researcher to contact senior staff members then made appointments with them for discussion prior to commencing this research. Mr ST, Mr TN and Mr RJ were senior managers and worked in management as the principal senior employees at CCC. These senior managers provided substantial information in a discussion with them and at the first discussion they described how new staff members

had to learn and obtain information from them, as their supervisory role was to provide information and train new staff members. Staff members who participated in this research included Mr Nat from the IT department; Mr Chai and Ms Wi from international sales; Ms Bee, Ms Joop, and Ms Nick from procurement; Mr Oh, Ms Fon, and Ms Ple from domestic sales and Ms Nid from the Financial Department. The senior managers introduced the researcher to the staff members and explained that the researcher would join in all activities in the CCC Company and would also learn information from the CEO at the top level, senior managers as the next level and then staff members as the practitioner level. The people in CCC at the various levels are shown in Table 4.1.

Table 4-1: People involved in interviews at the preliminary stage

Ranking	Name	Position
Top Management	The business owner	CEO
Middle Level Management (Senior Managers)	Mr ST	International Trade Manager
	Mr TN	Support Manager
	Mr RJ	IT Manager
Other Staff Members	Mr Nat	IT Technician
	Mr Chai and Ms Wi	International Sales
	Ms Bee, Ms Joop, and Ms Nick	Procurement
	Mr Oh, Ms Fon, and Ms Ple	Domestic Sales
	Ms Nid	Financial Department

The people in Table 4.1 are main employees that work in different departments and levels who have to co-operate in their work duties with other employees. The information flowed from the senior employees to other co-workers within the organisation. CCC had grown larger over the past 20 years and by 2009 was in the position to expand the business. The CEO and senior management were aware of the new change in implementing IT projects and they had several meetings in response to the new change prior to the construction commencing. They agreed that they had to improve many areas, such as management systems in the organisation, infrastructures within the organisation, the look of the organisation, and the reputation of the

organisation. The improvement aimed to prepare them to face fierce competition and an uncertain future business environment. The researcher then undertook the three cycles and observed the impact of changes on the organisation. The following section describes the first cycle of activities.

4.3 In the action research cycle 1

Following Susman and Evered (1978), the five phases within each Action Research cycle are implemented in this research: 1) diagnosing, 2) action planning, 3) action taking, 4) evaluating and 5) specifying learning. These five processes explain clear areas of importance in the ideal form of Action Research that is to create new or changed systems development methodologies. Figure 4.1 shows how this Action Research was conducted through the five phases.

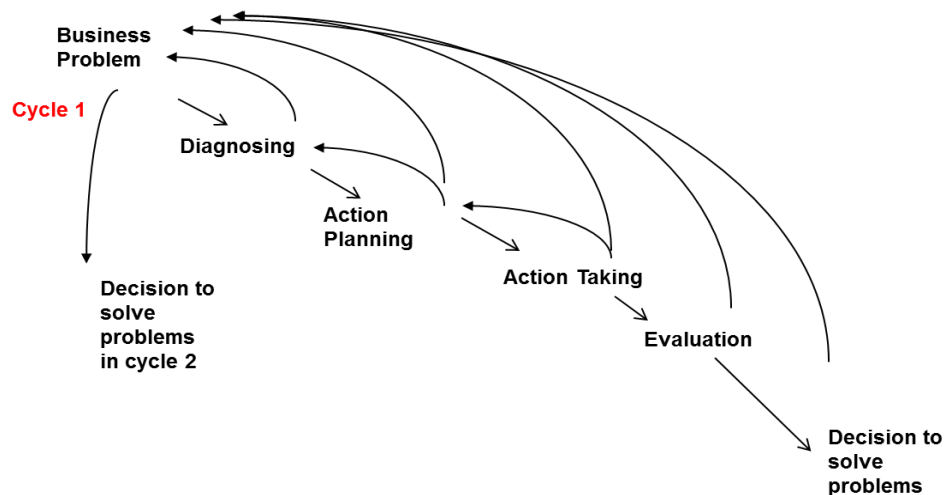


Figure 4-1: Action research cycle 1

In this research, cycle one is a cycle of investigation and problem setting. The CEO and senior managers were clear in their minds about what the problem was, but they had no understanding of why this was the case. They knew there were poor work practices within the company and that communications and information flows in the supply chain were inefficient. They also knew their ‘bottom line’ was being affected. However, there was no realisation as to why. From the initial research, the decision was made to use the first cycle to understand the problems in detail and then use this to create the first set of interventions to begin a rectification process in CCC.

The next section narrates the five phases of the Action Research cycle and phase 1, the diagnosis phase.

4.3.1 Phase 1 - Diagnosing

The researcher acknowledged the initial problem that the CEO and senior managers investigated, discovering that it occurred because of the complexity within the organisation rather than problems arising from outside CCC. The initial problem was confusion amongst all staff members, which led to disorganised work practice, miscommunication, and lack of co-operation amongst staff members within the organisation. This problem needed an urgent solution.

To facilitate a diagnosis of the problem in detail, the researcher got acquainted with staff members at CCC. This process was to introduce staff to the researcher so they could get to know him and feel comfortable when the researcher approached them for queries. Image 4.1 shows the researcher joining the organisation's meeting to understand the need for improvements and to find general information about the organisation before this change parts/interventions research was conducted. This process was undertaken at the CCC premises in Bangkok.

Image 4.1: A meeting in preparation for organisational improvement



In the first meeting, the researcher discussed with senior managers the possibility that the researcher could meet all senior staff members. Senior staff members agreed that both official and unofficial meetings would be arranged as they were assigned by the business owner to provide support in this research. Three senior staff members were cooperative and provided substantial information to conduct this research.

At the preliminary meeting, the researcher found that access to and use of knowledge and information in the organisation were important factors that the CEO and management level were aware was affecting what happened inside the company on a daily basis. The CEO and senior management had to ensure that new employees knew how to learn and obtain information from both within and outside the organisation. Senior managers were unable to spend enough of their time to help staff learn as they had to undertake other important duties. The research showed there was little internal staff training. There were no digital repositories of information. There was a disorganised and non-systematic 'library' of brochures and policies. The investigation showed that new employees or employees transferred internally had to spend significant amounts of time by trial and error to understand what they had to do.

The CEO attempted to find appropriate ways to develop systems to improve communication processes and business performance through activities, management, and business operations. Hence, he hoped that this organisational development would assist and promote progress. *'I want to improve business process in my company. The implementation of IT 'should lead to the change in management systems' (A preliminary discussion with the CEO at the CCC Company (9 May 2009 at 2.30 pm))*. However, it was apparent that this was nowhere near sufficient for the company to operate efficiently. There was a paucity of IT available to staff and there were few systems available to sort, store or enable use of existing information, other than as tacit knowledge in individuals spread across the company.

To facilitate a better understanding of what was happening in the company, the researcher regularly requested interviews with senior management and requested them to allow the researcher to participate in the work activities as a normal employee. This proved to be successful in understanding what was happening across the company – in the office and in the factories. However, the focus was in the office as the management of the operations of the company and its relationships along its supply chain emanated from there.

The researcher at this stage was beginning to confirm the CEO's view that IT could help the organisation to enhance the operations of its business, but the researcher had to firstly investigate the needs of staff members and understand the strategic position and operational processes of the company with the senior managers. The researcher then had to find how IT could facilitate their work and enhance their duties, thus improving business performance.

A preliminary conclusion was that staff members would find that IT could help with work efficiency; however, as this was only preliminary, further planning was needed.

Figure 4.2 demonstrated how the researcher worked with the CEO and senior managers to plan and develop IT projects to facilitate work efficiencies through IT as a means to impact on efficiencies in the supply chain.

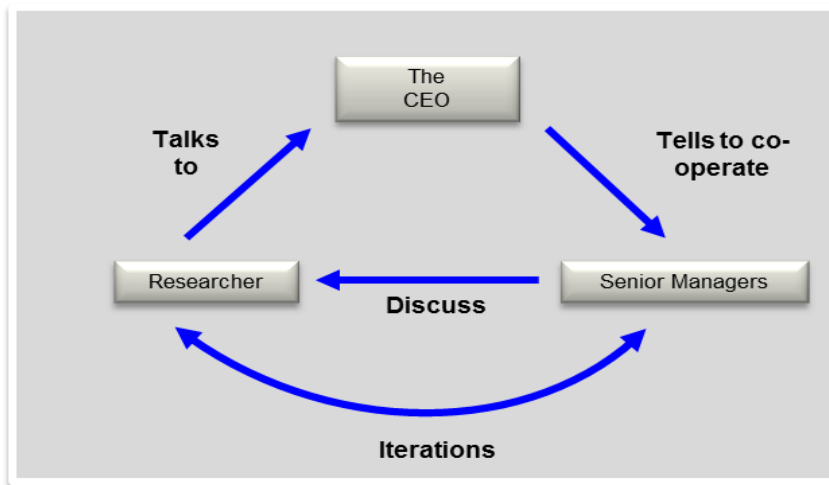


Figure 4-2: Action Research Communication Flow

The communication flow in Figure 4.2 was in the form of iterations, which meant that the researcher talked to the CEO, then senior managers and then again. The communication process happened in loops. If the result was not at a satisfactory level, for either party the researcher and senior managers would have to discuss again for improvements.

4.3.2 Phase 2 - Action planning

In this second phase, the researcher aimed to familiarise himself with senior managers to understand how change and planning occurred in the company, and to seek their assistance in conducting the research through the three cycles. It was a trust building exercise to facilitate the research. Each of these participants was interviewed and an understanding of their status in the company was determined.

Mr ST has 13 years of experience with CCC and has learnt all of the work processes in the organisation from his own extensive experience. Mr ST started his career at CCC with no experience in Fire Truck manufacturing and no business background. He gathered information and established a learning process on his own and followed the CEO from the beginning. Mr ST developed an understanding of the CEO's vision and had seen the business develop from the beginning. His business performance was deemed to be highly satisfactory by the CEO and he was credited with CCC's business operations achieving profits during the

previous 13 years. As a key person and with his 13 years experience in the CCC Company, Mr ST gathered his knowledge by learning and doing, and contributed to know-how of a company in a person. The researcher concluded that he exemplified the organisational culture of self reliance and individual drive that existed in the company when the research started.

Mr TN joined CCC in 2005 with no background at all in the Fire Truck business, having graduated with an Accounting Degree. He found the Fire Truck business interesting when he first joined the company. Mr TN learned the business operations process from his interests and was also guided by Mr ST and the CCC consultant team. Mr TN stepped up into the supervisor level and worked in a support division to provide information support to current and new staff members to successfully achieve their roles and responsibilities. Mr TN focused on specific information that staff members regularly searched for and inquired about from his department. Mr TN commented from the previous discussion that information he searched for was 'useful to staff members and his department could fully support other departments and could reduce the stress of staff in making it easier to find necessary information for their tasks'. Staff members he believed, could then find information more accurately and substantively. Mr TN pointed out that the basic source of information to learn was from the products of CCC. The staff members could start from the catalogues and brochures from suppliers to learn component parts of final products. Then the staff members could learn in the factories via the operational process. Again, whilst there was some support for new and existing staff in getting the information they needed, too little of it was in a re-usable form. Little was stored on computers where access was easy. Mr TN noted that each request was a new request. There was no facility available to address frequent or commonly asked questions.

Mr RJ had 30 years in project management when he joined CCC in 2008 as a consultant. The company already had plans to expand the business size and grow into a multinational business, trading with customers and suppliers from various countries throughout the world such as Europe, Scandinavia, Australia, USA, and other Asian neighbouring countries. With the expansion of the business, Mr RJ observed the need for better tools, equipment, and machines to support the expanded operations of the business. He suggested in an interview that, whilst the company had invested substantially in world-class equipment in the manufacturing process, and in a new building to house the office and administration of the company, there was a clear need for IT projects to be implemented in the organisation to facilitate the operational and business processes and align them to the improved manufacturing process.

As part of the planning process with senior CCC management, the researcher proposed a plan for various interventions to occur to meet the need for IT support, as identified by the senior managers and by the CEO. This stage was important as no interventions could begin without agreement at the management level or consent from the CEO. The CEO, senior managers and the researcher were aware that any intervention within the company using IT involved substantial investment and had to be designed and planned to meet specific problems that had been identified by the senior managers themselves and subsequently by the researcher.

The researcher then took a short time away from the company and developed a plan. Table 4.2 shows the proposed timeline for interventions to be conducted at CCC. The proposed timeline was necessary because it had to be clear what was going to happen and how the changes/interventions proposed could be done within proposed budgets.

Table 4-2: Timeline for interventions

Cycles	May 09	Jun 09	Jul 09	Aug 09	Sep 09	Oct 09	Nov 09	Dec 09	Jan 10	Feb 10	Mar 10
Cycle 1	Interviewed the business owner; interviewed senior staff members; observed staff members work										
Cycle 2			Implemented four IT project; observed staff members during the IT projects implementation; interviewed them; and took notes								
Cycle 3										Developed IT training programs; classified staff members into different levels; launched trainings; interviewed staff members and senior staff members; organised meetings; and developed IT policy	

Senior managers and staff members brought this timeline to discuss with the business owner and the business owner agreed. Consent was given by both the CEO and senior managers for the researcher to begin the research process and start planning the IT projects to improve the work and communication processes at the CCC Company.

Figure 4.3 shows how the researcher interacted with the business owner and senior managers to develop IT projects, starting with the planning.

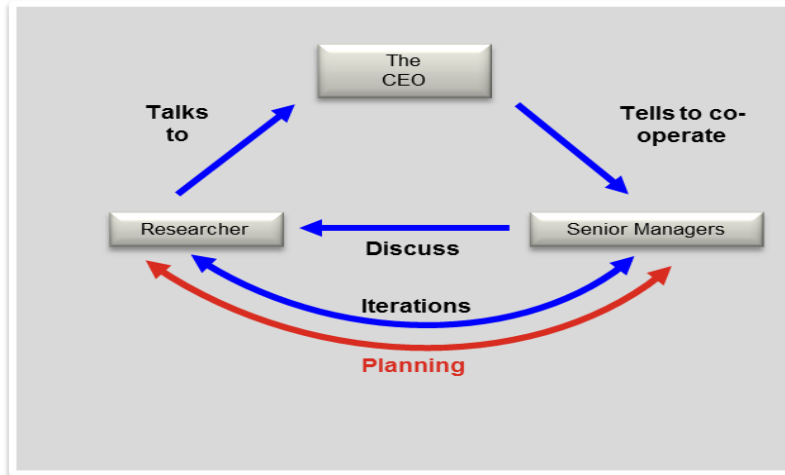


Figure 4-3: Communication flow with Planning on Action Research at CCC Company

4.3.3 Phase 3 - Action taking

In the phase 3 of Action Research cycle 1 (action taking), the researcher held discussions with the three senior managers (Mr ST, Mr TN and Mr RJ) to organise further interviews with them and then with staff. Mr ST allotted his time for an interview in the first week of June 2009, whilst Mr TN and Mr RJ allotted their time for an interview in the second week of June 2009. The interviews took place at CCC and each interview lasted between 45 minutes to one hour.

a) Mr ST, the International Trade Manager

In the first interview with Mr ST, he started with a description of his duties in the organisation and explained the expansion of the business over the past decade. He noted that the ‘organisational structure has changed over time’. It has evolved from a simple family business in a single location to a complex organisation in three locations, with a head office, and two factories.

The original organisational structure was developed over time and used for about 40 years with some slight changes, but was unofficially changed. The original organisational structure at the main office is shown in Figure 4.4.

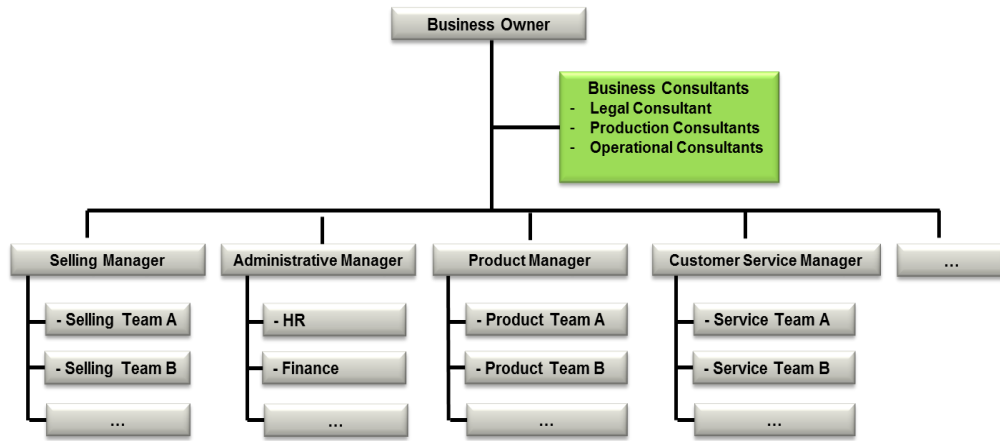


Figure 4-4: Original Organisational Structure CCC Company (1970-2009)

Source: CCC Company (1970 - 2009)

In 2009, the organisation decided that they would expand the business size as well as improve the business operations in response to increased demand for their products. The new organisational structure still used was a flat organisational format so that senior staff members and senior managers could report the progress of business operations to the CEO.

A new organisational structure was introduced to staff members during the construction of the new office block so that the staff members understood their new positions and responsibilities at work. The job description was similar to the previous organisational structure but they had more responsibility to address. The new organisational structure is demonstrated in Figure 4.5.

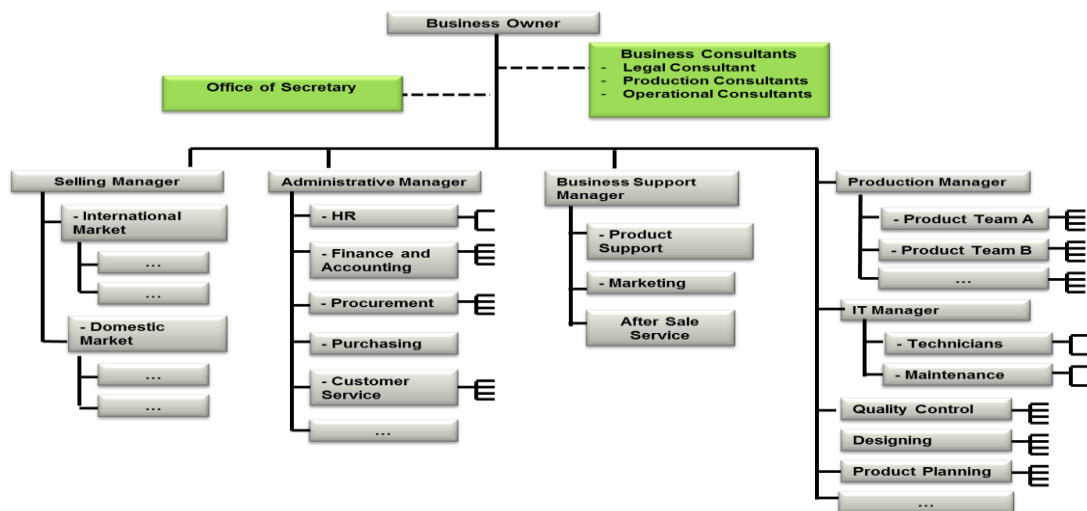


Figure 4-5: New Organisational Structure at the Main Office CCC Company (2010 – present)

Source: CCC Company (2010)

In the factories, both in Nakornpathom and Nonthaburi provinces, the same organisational structure shown in Figure 4.6 was used. It was, in fact, not practical but they just drew an organisational structure to inform all staff members that they had one. Work responsibilities were complicated and created confusion amongst the staff members at both the main office and the factories, especially when they communicated with each other. Figure 4.6 demonstrates the organisational structure at the CCC Factories.

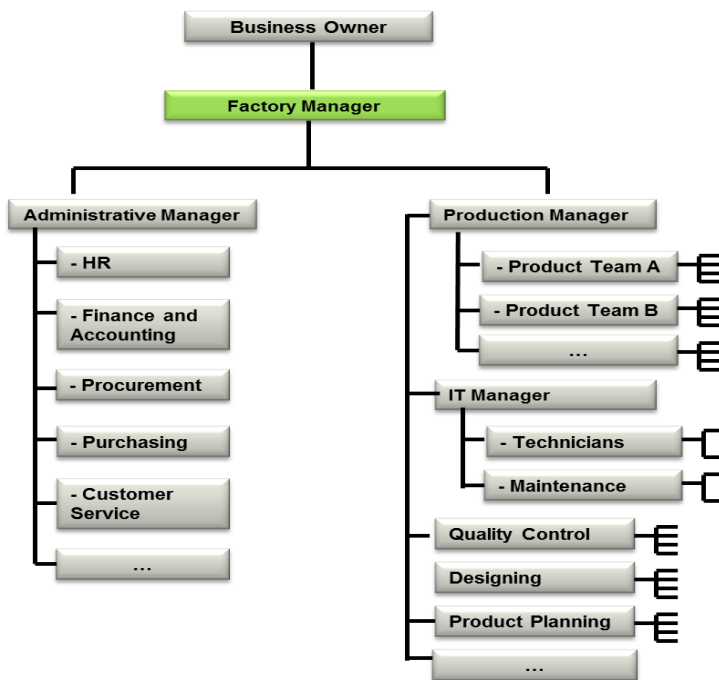


Figure 4-6: Organisational Structure at the CCC Factories (1970 – 2009)

Source: CCC Company (2009)

Figure 4.6 was the organisational structure at the CCC Factories and it was used in between 1970 and 2009. Then the organisational structure was redesigned as demonstrated in Figure 4.7. Figure 4.7 demonstrates the new organisational structure that staff members found more comfortable and helped them better understand their work responsibilities.

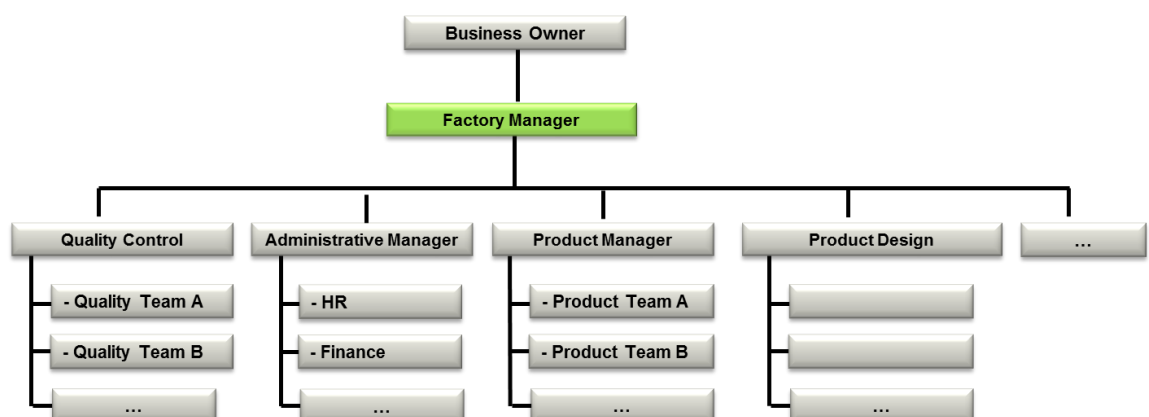


Figure 4-7: New Organisational Structure at all Factories (2009 – present)

Source: CCC Company (2010)

Mr ST also noted that he was involved in the international activities of the company. The researcher asked Mr ST about his duties in his new department, the International Trade Department. The International Trade Department is divided into three main sections: international procurement, international selling and international business development. International procurement is responsible for the sourcing of materials and supplies from companies in countries such as in China, Japan, and Germany. The International Trade Department is responsible for the selling process with the international market, and is involved in both direct selling as well as selling products through international agents, acting as intermediaries. The international business development section dealt with the detail of products, searched for new customers, and sought new business partners. The international business development section is new to the organisation. Mr ST said that his major responsibilities involved all tasks that required contact with suppliers and customers located in other countries. However, he also said that he still provides his support to local sales within Thailand. These customers require a lot of ‘care and attention’ and include private organisations, government sector organisations and departments, and local government organisations. With reference to his work duties and his responsibilities at the CCC Company, he explained that:

My work responsibility lies in all international involvements, which includes buying and selling products to and from other countries. Some work requires details with special supervision from senior employees or the managers. I have to be there to push up the work process. However, I can only spare my time there with them whenever I can.

Mr ST also addressed the challenges in his department, stating that:

There are many problems in international business because our products are unique and they are niche to the market. Our products can be categorised as generating or cogenerating products. We create a product with various components and from different suppliers. The supplies must have quality to ensure our final products. We carefully choose parts and supplies for our products. The process is complicated....”

Choosing parts and supplies for the CCC products required good management and well established communication systems with both customers and suppliers. Each process required

specialists in every sector to deal with all challenges through to the final production process. He noted that it was here that a serious problem existed in the company. He said:

The requirements of knowledge that the staff members in Procurement or the Purchasing Department have to know are our products, types and parts of required supplies, and the procurement process in our organisation. Sometimes they don't have enough knowledge and it keeps changing and that too is a problem.

Mr ST also disclosed the operational processes and administrative processes required of all staff members.

In essence he said that they must be able to coordinate work to avoid confusion and misunderstanding that can delay the operational processes in delivery of the final products. Staff members have to understand work requirements substantially so that they could support each other from one department to other departments. Mr ST also noted that the company did not only sell fire trucks, but they also sold parts for fire trucks, such as fire pumps and extinguishing equipment.

Mr ST said that staff members had to know all products and their component parts. The company also produces fire fighting boats and rescue vehicles. Without all staff knowing the required products and supplies, the procurement process could cause delays in operational processes and affect the due date of product delivery to customers. He noted that there was no standard way this knowledge existed and there was no means to store or distribute that knowledge. He also noted that the staff members were often information poor and that transferring of information between people did not happen all that often.

Mr ST also said that the company would like to stimulate staff members to work more efficiently. There was recognition, he said, at the senior management level, that what was currently happening was affecting communications within and outside the company as well as the efficiency of product orders and delivery to customers. He noted that because of this, he and others at the supervisor level or management level had more jobs to undertake to ensure their work responsibilities were completed. He said there was also a need for his and others' subordinates to better understand their work duties and ensure that the required outcomes are met.

Mr ST commented that, from his viewpoint, more training was needed within the company to help staff to work more efficiently. Mr ST provided his perspectives saying that:

The supervisor level at each department has to play an important role to motivate their subordinates to work efficiently. I have observed that if the supervisor level does not train or advise their subordinates well, they can get stuck and not satisfy their responsibility. Besides, the willingness to learn of the subordinates is very important. We have to do more.

Mr ST further commented that to successfully train staff members to undertake their tasks efficiently at CCC it had to be the responsibility at the supervisor level to educate their subordinates. He explained that the size of the organisation was small from the beginning and there were only specialists from various areas such as mechanics, the Fire Truck Designer, Fire Truck assemblers, and some office staff members to work closely in the beginning. Knowledge transfer, he said, 'starts at this point'. The specialists from various areas shared their knowledge in the beginning, then the key staff members learned the processes from knowledge sharing. But, he said, the company grew and this culture was weakened.

At this new stage, CCC was much bigger and the management system still needed to foster this knowledge sharing. It was, he said, 'very difficult'. He said CCC needed to establish a knowledge sharing system for the new staff members. Mr ST suggested that the supervisor level in the expanded company has to teach their subordinates and provide them with training session simultaneously. He provided an example that 'students are assessed by an exam at school. In an organisation, the employees are evaluated by their work performance'. Mr ST elaborated, he said that:

If the employees can perform at an organisation's standard level, the organisation can achieve profit level. The employees will get remuneration as a reward in return. However, the remuneration has to be well organised and awarded in a systematic way, not at the discretion of the business owners or managers.

In the interviews, Mr ST made the point that work in the company sometimes has to be days and nights, but to motivate the staff members to maintain their work efficiently at a quality level is something that the supervisor, or manager has to consider carefully. There is a need to balance drive for improvement without affecting productivity too much. The expectation of the company is that people would aim at higher levels so that the quality of products was well maintained. However, without sufficient information and broad access to new information, that would be difficult to maintain. So he felt there was a type of paradox here. 'We need

improvement and we need to reward that'. However, he asked, 'how do you facilitate that in this company?' In achieving organisational objectives Mr ST commented that:

The employees have to perform their tasks at higher levels to receive rewards such as a bonus from the organisation. They have to perform their tasks efficiently because of their responsibility at work, not because of the bonus rewards. There is no such contract in our organisation that the employees will receive bonus rewards at the end of the year. The organisation rewards them because they have shown responsibilities to their duties. We have no official policy to provide them a bonus at year-end.

Mr ST explained that there was a relationship between the terms 'work responsibility' and 'reward systems' in the organisation. Mr ST claimed that a reward system was considered to be a motivating system but was not a real motivation system at CCC Company. Mr ST was convinced that extra remuneration or bonuses were there to encourage staff members to maintain quality or/and increase quality levels of the company's products. In the International Department, Mr ST also noted that he allowed decision making by his subordinates. He commented that:

I allow my subordinates to discuss amongst themselves in a private meeting room. They can discuss in a team. I will ensure their decision making, job-by-job, whether they understand their tasks undertaking. In the long run, my subordinates will learn how to deal with some certain situations themselves without asking for solutions.

However, there was no formal structure in the company to facilitate or develop this across all units. The company had no universal strategy for collaborative work and there was no plan about training them as a means to assist them with change or with collaboration. In a discussion with Mr ST, he said that training should be a requirement of each department. They should plan in advance throughout the year because each department will know themselves what they really need. Then they should organise this with the HR people. However, HR should take responsibility for general training [one that fits all employees] as a means to increase performance levels of all employees in the organisation. He also commented that:

HR people do not know the specific needs for training of each department. The supervisor level in each department has to

work closely with the HR people or otherwise HR cannot organise accordingly to their specific needs.

In addition Mr ST noted that staff members have to learn from customers and suppliers. The information from both customers and suppliers was important to help the organisation to reduce costs. This required new information and the application of that new information inside the company. Mr ST said that he guided his subordinates in many ways to obtain that new information for the organisation. He said:

We study our business parties such as customers and suppliers from the magazines. There are many companies throughout the world operating in our fire truck industry. There are many suppliers but the quality of the products or parts of products are different. We study their information. We study parts of products and the manufacturers that create the products and parts from the fire truck businesses magazines. Many of these companies can create products at high quality but aim their target to sell their products only in European markets. However, many of them are also open to the Asian markets.

Mr ST noted that competition was high in this business sector with many suppliers to choose from in the world market. To decrease costs, staff members must know products well and understand the requirements to create finished products. This includes knowledge about such standards and quality of the supplies, information that could be found from the supplier side. In addition, customers can also provide substantive information. As this type of product is mostly made-to-order, some customers have clear specifications for their products. The company, he said, could also learn the application of technology or innovation from those customers. He argued that whilst CCC collected the information, often continuously, it was not stored anywhere unless it was in brochure form. There was a very limited ability to share new information and new knowledge with each other, other than in a storeroom, which was not sorted properly, nor was it systematic (Image 4.2). Image 4.2 shows a storeroom that keeps information and brochures of supplies and products. These are not sorted systematically.

Image 4.2: Store room that keeps collections of information and brochures



Mr ST discussed the various techniques used to approach customers stating that:

When we meet customers, we have to be smarter than the customers. In this industry, we have to know well. We have to know the products, parts and also the information from the customer side.

Mr ST supported his reason for CCC staff needing to know more than the customers. He said it built trust with the customers so that CCC could help them solve their fire truck problems and needs. Fully understanding the company's products also built up the right image and enhanced trust in the quality of products by the customers themselves. Mr ST also elaborated from his experience on the need for staff to create trust with international suppliers because they could also tell their customers in their own countries that CCC created products to an international standard quality and at acceptable and competitive prices. His experience taught him to always build trust with the customers and suppliers and he noted that he often convinced them to visit the CCC Company premises to observe the operational processes. He said:

Dealers or international agents are important to us. We can not only visit them and talk with them. We have to organise a visit to our factory to show them and build trust with them about our capability to create products.

Mr ST highlighted the importance of then maintaining the relationships and connections with stakeholders involved in the business such as suppliers. He commented that:

It's important for our staff members to learn how to treat the suppliers when visiting our organisation and factory. They can be both suppliers and customers at the same time. We buy their products and they can also help us to sell our products as well.

However he noted, this building of relationships and building of trust often resided in one or two people only and others did not know about it. There was little sharing of what happened and people learned when the situations arose.

Summary of Needs (Mr ST)

- Database about customers
- Database about suppliers
- Database about the products, supplies, auto-parts, that needed to be synchronised amongst staff members at the CCC Company
- Database about product and histories
- Database about standards used for products, both domestic and international standards
- Database about standard used for supplies both domestic and international standards

b) Mr TN, the Business Support Manager

In the second week of June 2009, the researcher interviewed Mr TN, another Senior Manager who worked in the support department. This was a new department, established in the previous two years, which was structured to support other departments or divisions with essential and relevant information. Mr TN's job was to gather information mostly to support production, but also the administration, sales, and procurement departments. However, all staff members could also approach him with information inquiries. The information from the support department was also used for all departments to support their customers when needed.

Figure 4.8 demonstrates how Mr TN supports staff members in the organisation. Mr TN's overall objective was to satisfy his internal customers: production, sales, administrative and procurement departments. At CCC, the production department supports the sales department and the sales department supports the customers. The administrative department supports the procurement department, and procurement department also support the customers. All of the support requires detailed, accurate and timely information (Fig 4.8).

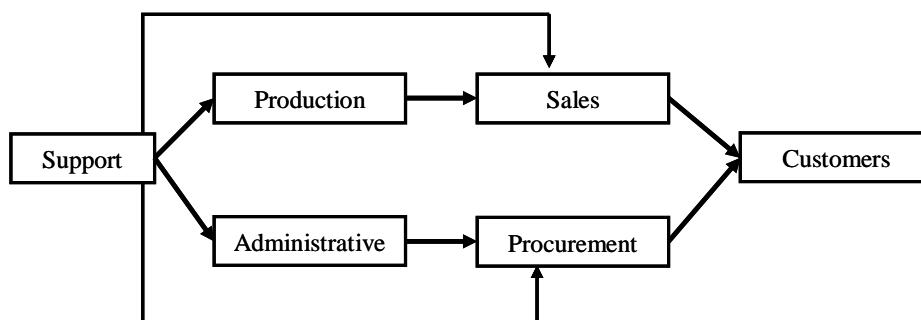


Figure 4-8: Mr TN's work responsibilities

Mr TN said that a key part of information provision was related to training of staff. He said training could be done both in-house and/or the employees are sent for training outside the organisation. CCC had adopted both types of training. Mr TN explained how he trained his subordinates in the organisation based on his extensive experience. Mr TN explained that staff in the CCC Company kept records that are well organised, but were not fully sequential. Other staff members from other departments were rarely able to perform cross function information searches and only infrequently retrieved information efficiently. If someone was absent from work and it was in urgent, other staff members could continue the work process with little effort as the systems, he noted, 'are improving'. The system ensured correct information and ensured that staff members could efficiently undertake the tasks under their responsibility. However learning was still not complete across the organisation. He tells the story of one particular woman who had great information, but it was stored in her book and sometimes she took that book home and no-one had access.

Mr TN also discussed how to solve the information problems in the organisation and these techniques, he believed, had to be learned as a continuous process. Staff members had to follow the new trends because technology and innovation changes rapidly. New techniques had to be created for problem solving in some situations. Mr TN highlighted that all staff members needed to have access to information to perform better. Sense, duty, and responsibility had to be their concern. The staff members are aware that they are part of the organisation; they can take high responsibility on their tasks. However, he argues, they need support to do that, support that is continuous and up to date.

I think the organisation has to support employees with IT equipment so that they can work more efficiently. Some new staff members have computer knowledge and they could train their senior staff about how to use them. This is very important because most of the businesses now use computers for their communication processes.

Mr TN believed information was important to the organisation and was complementary to the need for better communication processes, while interpersonal skills were a tool to make communication processes flow efficiently within the organisation. In a comment similar to Mr ST, Mr TN said:

I observe that communication is important and the staff members need to have interpersonal skills to be able to communicate to both suppliers and customers efficiently.

To enhance the communication process flow within the organisation, Mr TN also suggested improving the information systems within the organisation. Mr TN was convinced that information system improvement would lead to business improvement and support staff members to learn about products and business operations, both existing and new, as they emerged over time. He said:

The staff members have to learn about our products and parts so well so as to be able to explain what they need to purchase from the suppliers and what they are selling to the customers.

Mr TN also discussed the need to get information from other information sources to obtain updated information. He also noted that there was a need to categorise this information and create and to develop a database for the company. Mr TN explained the importance of the database and commented that:

Some information I have organised to get from databases available in other countries. I collect information from many sources such as from the Internet and direct contact with suppliers in other countries such as from European countries. I can manage to get them.

Mr TN further explained that information about products and parts, about work processes, suppliers and customers was important because it helped support the work of staff members. Mr TN noted how he thought information could be utilised within the organisation. He said that:

I would suggest three levels in educating new staff members to learn information from the organisation. Firstly, teach them to know rules and regulations. Then I will teach them the work processes such as filing systems in the organisation as well as the organisational structure.

Mr TN further explained and commented on the second category of information that required training:

Secondly, the organisation will have to train the staff about the products of our company. This level is a long time process and this process is practiced with on the job training. The new employees learn from their practice in the organisation. However we don't do it well at all at the moment.

The third category involved individual skills and Mr TN commented:

Lastly, it is essential that staff have knowledge about the techniques of how to solve problems and how to work in the organisation efficiently. Different organisations have different requirements and different working techniques. We also have our own ways such as negotiation techniques, selling techniques, and communication techniques. Some information can be disclosed to other organisations and some information cannot be disclosed. They have to learn how to use the right information. But they need access to it first.

With respect to this last category of information, Mr TN explained that staff members have to feel themselves as part of the organisation. Each staff member needs to have their responsibility with their work tasks assigned. For example, if they are working in the procurement department, 'they need to have creativity skills to help our organisation to save costs'. If they work in the production process, 'they need to have an engineering background'. He continued:

The last level is the most important part. We need good people with high levels of communication skills to demonstrate and teach new staff members to follow in the right direction.

Mr TN stated that office tasks were also important. Staff members regularly learnt information from the brochures and hard copies. However, they regularly also lost that information and had to look for the copy every time they required it. He said: 'if they need the information ten times, they have to find the information ten times. If they could not find it then they would approach senior staff members'. This was inefficient, he noted, and wasted the time of the senior staff. Therefore, he argued, that some form of filing system was required.

The filing task can be hard copy form or soft copy depending on the type of information. Some types of information require both hard copy [printed version] and soft copy [saved as files in the organisation's database]. Some types of information has to be only a soft copy or a hard copy. But we need a system!

As mentioned previously, Mr TN's job was to collect information to support all staff members in all departments. The problem was he would have to develop his own system to keep information efficiently and make it easy to share with his subordinates and colleagues. Besides, Mr TN had to update information and validate whether the information that CCC had from various sources was up-to-date.

Some of our suppliers in many countries are up-to-date and they are high technology-oriented. They have their own computerised database. Some of our suppliers can also provide us information in a soft copy format and the information can be updated all the time. They regularly inform us to any updates of the information. But how do we share that here?

In a discussion, Mr TN explained that some suppliers only have information in hard copy or as catalogues and some information was not in an updated version. These suppliers might tell him to wait for the updated information to be posted and sometimes the information was needed urgently. In this case, production processes might experience delays. In other cases, the company might suffer a negative effect on profits because of the delays and the organisation might have to look for other suppliers that can better deal with this situation. However, there were some cases where CCC had to deal with pressure applied from the customers. Sometimes this could be solved because suppliers held standard parts according to the international standards requirements for fire truck building. He noted that the problem in CCC was that information was not systematically maintained and updates happened only irregularly. Storage was in a single computer to which everyone had access or information was stored in hardcopy in the 'library' (Image 4.2). He said:

Some suppliers such as in Japan and Norway still prefer to use product catalogues in their own language. This information is not for international use. However, we have to keep them in hard copy in that case [in the form of catalogues].

However, there were many discussions in meetings about how the information was to be kept. Mr TN explained from his experience in the past five years that:

The information is kept according to the original sources of information. If the original source of information is a soft copy, then we keep in soft copy. If they are printed matter, then we keep then in the catalogue as the original source.

CCC employed a significant amount of technology in the manufacturing process. Staff members had to learn how to operate tools, equipment and machineries such as metal cutting machines in the organisation, either in the office or in the factories. Mr TN further explained that employees at the factories have to study about the safety issues in the factories and follow international standards. They had to be trained. It is essential for staff to have that knowledge to be able to understand where their duties fit into the company's processes. He stated that:

There are tools, equipment, and machines in our organisation that staff members have to learn. These can be categorised into two groups; the first group is the office facilities and equipment, and the second group is the machines and equipment in our factory.

The first group that Mr TN mentioned were staff members that worked in the office. The other group were staff members that worked in the factories. Another important task that Mr TN had was the training of new staff members. He had to train them to learn the requisite information and how to organise their work. He noted:

When I train the new staff members under my supervision, I will use a model to train them. I will use our suppliers as models to train them. I use their catalogues as knowledge sharing and as a source of information. It may take two to three months to learn. The new staff members will have questions and more questions will be asked.

Mr TN discussed the types of training in the organisation and explained the importance of training. He said that he did not have sufficient time to train them as well as he would like to. However, he proposed that:

We provide them training both in-house and also at exhibitions in the country and also exhibitions in other countries.

In many cases, staff members had to study the requisite information themselves. They had to gather information from many sources and keep them in good condition so that they could re-learn the same information the next time it was required. None of the information was stored other than in the 'library' in hard copy. Much of the knowledge the staff needed was provided from outside the company but was rarely shared and never stored in a useable form. Mr TN said:

The information from the international exhibitions that our staff members can obtain contributes to their knowledge and understanding about 60 percent and another 30 to 40 percent is from the demonstration of parts and products from the suppliers at their premises.

Mr TN shared from his experience that the CCC Company staff also obtained information from existing sources inside the company, such as from the supervisors, from some CDs or from printed materials. However, he noted with some emphasis that if the information was

lost, the supervisor was the only source available in the organisation. Even if they can get the information from the printed matter or CDs, staff still wanted to ask their supervisor or the senior employees in the organisation to be assured that the information was reliable. They trusted senior employees or supervisors regardless of other sources also available in the organisation. The culture in CCC was that the knowledge held tacitly by the senior staff is the most trusted, as Mr TN commented:

So far, we share technical information that we receive from suppliers in forms of CDs and hardcopies such as brochures and catalogues. The reports from attending international exhibitions can be another source of information. However, there is a time overlap between the current issues at work and the writing time. We have limited people and all of us work to full capacity. However, staff have most trust in us and they rely on us for their information mostly.

Knowledge and information transfer processes in CCC were mostly done verbally due to the overlapping of the workload. Therefore, only few documents of written information were recorded or kept in files. Otherwise they were kept as CDs and hardcopies such as brochures and catalogue formats. This required more space, which was sometimes difficult to find, especially when it was not catalogued. In the case that someone used particular information and kept it on their table, other staff members would have to wait until it was returned. It slowed down the processes of the company. If a staff member knows who had a piece of information, after time, they will ask about it. However, this meant that staff members needed to find time to share the information. Such activity is not normally part of 'what we do here', Mr TH said:

I can see problems in knowledge transfer in that we do not have a good knowledge transfer system. We use the training method. I have to say it is not all that successful.

Mr TN elaborated that from his extensive experience about personal knowledge transfer in the company and the reliance on senior staff, that the first time and second time inquiries were acceptable. However, the supervisors easily grew tired if they had to answer the same query many times with the same group of people. However, he wondered how new employees could receive information correctly in the future. The ability to transfer knowledge to the following generation is still questionable by him, but he considers it essential for the company to go forward.

Summary of Needs (Mr TN)

- Database about the products and services, supplies, auto-parts, that need to be synchronised amongst staff members at the CCC Company
- Direction for information sharing problem within the organisation
- A better communication process amongst staff members within the organisation and outside the organisation
- Improve data or information management systems within the organisation
- Online orientation management system for new staff members
- Success case management arranged in database
- Techniques and skills to transfers to new staff members

c) Mr RJ, IT Manager

In a preliminary discussion with Mr RJ, he explained the history of his duties at CCC:

When I first joined the organisation, the CCC Company was in an expansion process. I thought it was a good time to propose an investment in IT infrastructure in the expansion plan at the same time. I spoke with the business owner and he agreed with my proposal. However, we were unsure what to do and it has been delayed and delayed.

In the second week of June 2009, the researcher had another interview with Mr RJ. Following a discussion with senior employees at CCC, Mr RJ had developed an understanding of organisational culture in the company, about how staff work, about what the administrative processes in the company are, about the functionality of company administration, and about how staff members or employees handle administrative processes such as receiving information, transferring information from one person to another and from one department to other departments, and transferring knowledge from one person to other people in the organisation. Mr RJ further stated:

I conducted a needs assessment in the company and I could see that many areas required improvements and they could be done simultaneously in the expansion period.

Mr RJ started planning the information system improvement and aimed to improve the overall system of CCC. He said:

I observed that the CCC Company needed to have better administrative processes and also improvements with some form of database for long-term benefits.

Mr RJ convinced the CEO of the importance of the information system and explained the prospective outcomes that would enable the administrative system to improve overall business performance. This, he argued, would lead to a decrease in processing time and facilitate and improve the work of the staff members. He also wanted to develop a database system for the organisation to capture and organise the information the company relied on for production and for trading with customers and suppliers. He commented that:

I discussed with the business owner about the importance of the establishing the IT system to facilitate the administrative works in the organisation and he provided his consent to run IT projects.

Mr RJ explained that the intent was for the information technology and information system to take a role in developing the communications system within the organisation to enable staff members at CCC to work efficiently.

The database will be a data warehouse for our company that the employees can retrieve any necessary information for their work and other related work of others. They will not have to ask their supervisors every single time small questions unless they are involved with decision making and require supervision from managers.

However, when the research started, these ideas had been in place for months, albeit some in draft form, yet no action had been taken. Other trade matters in the company were seen as more important and the project was just set aside. The researcher worked and planned for the organisation then discussed with the senior managers and explained to them the possibility of the IT projects to be implemented at the company.

Summary of Needs (Mr RJ)

- IT infrastructure and management
- Communication management and communication flows of staff members within the CCC Company
- Improvement of the information sharing process
- Develop database systems for the organisation
- Establish IT systems

4.3.4 Phase 4 – Evaluating

After these and some further discussions with the senior employees and senior managers who participated in the interviews at the CCC Company, the list of needs to make changes in the company became clear. These are summarised below:

Summary of Needs

- Database about the products and services, supplies, auto-parts, that need to be synchronised amongst staff members at the CCC Company
- Direction for information sharing problems within the organisation
- A better communication process amongst staff members within the organisation and outside the organisation
- Improve data or information management systems within the organisation
- Online orientation management system for new staff members
- Success case management arranged in database
- Techniques and skills to transfer to new staff members
- IT infrastructure and management
- Communication management and communication flows of staff members within the CCC Company
- Improvement in the information sharing process
- Develop database systems for the organisation
- Establish IT systems

After the three interviews with the three senior managers, the researcher had two weeks (week three and four of June 2009) to observe staff and how they worked in different departments in the company. The researcher concluded that work complexity was the major problem and needed attention. Employees regularly struggled with their work and attempted to rectify problems on their own with no direction. This distorted their work performance and delayed work processes. Communication was poor and people had specific clients, customers and suppliers that they appeared to guard from everyone else. A culture had developed of protecting their own knowledge. When the researcher asked them about this they replied that having their own clients was a way of protecting their jobs so they did not like to share. Through observations, it became obvious that the staff in the company were reluctant to share information, or to work in teams or discuss their work. When they met together for lunch or sometimes dinner, the conversations were mostly about gossip and social aspects.

I observed when I first joined the company that employees did not want to share information. When I asked them questions, they gestured that other senior managers could provide better information. Also, when I had lunch at the company canteen, I only heard about gossip and social things. It was difficult to get information about work from them.

The research, from observations, also showed that there were many problems in the work processes, related to 'conflict' in the company. The conflict included misunderstandings, misinterpretations, a lack of coordination, and poor time management amongst staff members within the company. These conflicts needed to be resolved to add efficiency and improve business performance. The cooperation of staff members was required in order to improve work efficiency and performance.

Following the interviews, observation periods in the company and informal discussions with senior staff, the researcher proposed several IT projects to be developed and planned with the aim to improve business performance, using some new ideas and those partially developed previously by Mr RJ. The IT projects were then discussed at the management level and ultimately finalised into 16 projects. The business owner approved the projects and allowed an annual budget according to an IT project plan. The business owner agreed that the IT projects would facilitate work at the Bangkok administrative office of CCC as the new building construction was just about to be completed.

The 'complexity' that was found at CCC convinced the researcher that IT projects should be implemented rapidly to solve work flow problems within the organisation. The intent was to enable the company to fix supply chain relationship issues and therefore improve manufacturing and distribution performance. The CEO determined that this was going to be the key strategy for the company over the next two to five years as a means to achieve better competitive advantage in the global market. He anticipated that, over time, communications within the company and between the company and its suppliers and customers would improve, and that work would be done faster and therefore costs reduced.

The research process in the first cycle had established the intent of the CEO and used this as leverage to understand the requirements in more detail, based on the views of the CEO, those of senior managers and from observations and informal discussions with staff. To do this certain actions were taken:

Cycle 1 Requirements Analysis**Action**

- Interviewed key informants (a business owner, managers, and staff members)
- Observed staff members at work to understand their needs, how IT could facilitate their work, and understand the obstacles of their work processes
- Developed a list of requirements for CCC to meet the CEOs decision to implement an IT-based solution

Interviews with key informants enabled the researcher to understand their actual needs for decisions in the second cycle. Once a decision was made that IT would be used to address the issues and that it was strategic to the company, it was imperative that the researcher, in collaboration with key personnel in the company, ensure that the cost of IT facilities proposed to invest was worth the IT investment for the changes wanted and needed within the organisation. The needs of staff members led to decisions about IT investment and guided direction for the company managers to plan how to use IT to improve communication processes and information sharing within the company and then both upstream and downstream in the CCC supply chain to facilitate efficiencies.

The requirements analysis in Cycle 1 was discussed with the senior managers and modified. The outcomes are shown below:

Review/outcomes

- The identification of major problems in the company in relation to (1) its supply chain relationships and (2) the complexity in the work processes internally.
- These problems were: difficulty in retrieving information; senior staff members were occupied with other duties; information sharing; database management within the organisation; double work allocation; work transferring process.
- Discussion with the CEO and then decisions made about understanding of the needs of the organisation to improve information sharing processes within the organisation, improve the efficiency of the supply chain, and improve communication system with the suppliers and customers to eliminate wrong order problems.
- The problems upstream in the supply chain were investigated and the researcher found that suppliers expected the company to improve communication systems and processes, whilst downstream clients of finished products expected to receive products on time. More importantly, the downstream clients expected to receive manuals of products together with product information at the time they enquired. The company had to have this information about products available for them accurately.
- The needs to improve information sharing related to infrastructure to support their work allocations, technology to help them ease their working process and communication process, better systems to facilitate their work, a system that staff could follow so that if any staff members were sick or absent unexpectedly work could continue seamlessly.

Key outcomes of Cycle 1 were the identification of communications and business relationship issues in relation to CCC and its supply chain; complexity in the work processes within the company; the poor use and sharing of information; and the lack of a clear strategy to solve problems. Complexity was the major problem within the company that all staff members were aware of, but chose not to identify in order to avoid conflict with other staff members. They regularly discussed this issue unofficially but did not know how to solve the problem. They raised the issue to the CEO via senior managers but the problems were not rectified.

4.3.5 Phase 5 – Specifying learning (Decision to solve problems and initiate cycle 2)

As a result of the needs analysis completed in phase four, the researcher proposed a set of IT projects that would specifically address the issues identified. These were checked and re-checked with senior managers until a list of projects was agreed on. Table 4.3 presents the 16

IT projects. It was planned to complete all projects within five years. Phase one of the IT projects was planned to be completed in 2010, phase two in 2013, and the final phase of the IT projects (phase three) in 2014. Phase one of the projects started in mid 2009 at the same time the new office building/company headquarters was constructed. However, the new building was located in the prime business area and planned to be fully complete in the year 2013 (Table 4.3).

Table 4-3: IT Projects at CCC Company for the year 2009 – 2011

IT Projects Development	Implementation
1. Network Development in Main Office (WAN, LAN, and Wireless System)	Phase 1
2. Network Development in Factory (WAN, LAN, and Wireless System)	Phase 2
3. Connectivity of networking between main office and factory	Phase 3
4. Internet system via WAN, LAN, and Wireless System	Phase 1
5. Database Management System	Phase 1
6. Website Development for Main Office	Phase 2 and 3
7. Website Development for Factory	Phase 2 and 3
8. Website Development for Museum	Phase 2 and 3
9. ERP system development	Phase 3
10. Finger scan systems	Phase 2
11. CCTV system	Phase 3
12. PABX telephone system	Phase 2
13. IT regulation manual for staff members	Phase 2 and 3
14. E-mail system	Phase 2
15. Intranet system development	Phase 2
16. Needs assessment for IT tools and equipments	Phase 1 and 2

Project one, four and five were selected and implemented as the IT projects for phase one. The reason to select projects one, four and five was because clear outcomes would be realised in a short period of time and would form a foundation for the other projects to follow in the second and third phases. The CEO was keen to get ‘a score on the board’ as quickly as possible as he

believed this would have a 'very positive effect on staff work performance' and encourage them to 'use IT'.

This first stage was designed to enable better management of data, information, and improve the ability of staff to learn. Therefore it was decided that a data management system needed to be well established. The senior managers and the researcher believed that a collection of programs, files, and information could enable staff members to store, modify, and extract information more efficiently, and as frequently as required. In addition, the information from a database could be presented in a variety of formats and adjustable as required.

The senior management explained that the organisation could also reduce redundancy caused by integrating multiple definitions of master data across different lines of business into a data warehouse. The data management system could also report inaccurate results. Master Data Management, to be introduced to the organisation was proposed in several IT projects in the following year starting from year 2009 to overcome data management system problems at CCC. Management and the researcher believed that this action would allow staff members to create, organise and manage master data centrally. The effectiveness of the IT projects meeting the needs of the next-generation transactional applications depended on the ability to support the memory-based, data virtualisation layer and the level of integration of this layer with the backend systems. However, the basic training process would be organised for staff members to get acquainted with the IT equipment and software.

Security was also seen as a crucial part of the database systems, which would be also be added in the IT system to ensure employees trusted the data management system to protect the data from accidental or deliberate loss. The IT technical team would assist staff to facilitate knowledge management and information sharing.

From the management perspective, senior managers have many duties and more jobs to undertake to ensure their work responsibilities and the work of their subordinates was improved. The IT projects were seen as a strategic means to achieve that. Training was also seen as crucial for management to guide subordinates to work more efficiently. The training could help assist staff members to undertake their tasks better and faster and with more accuracy. The management level had explained that the size of the organisation was initially small with only specialists from various areas working closely together. Now the company was much larger and, as it had grown quickly, the original culture of sharing knowledge and information had gone. The CEO saw the IT projects as strategic and fundamental to bring that

culture back. Therefore at the end of cycle 1 the following decisions were made as an intervention for Cycle 2 within CCC:

Decisions for cycle 2

- Assist the IT manager to develop IT projects to implement in the organisation aiming to improve the business sharing information process. The projects were 1) needs assessment for IT tools and equipments – to know what are the actual need to help them facilitate work improvements 2) Network Development in Main Office (WAN, LAN, and Wireless System) – to help staff members to be able to coordinate work and share information 3) Internet system via WAN, LAN, and Wireless System – to improve communication processes and information sharing and 4) Database Management System – to facilitate staff members to acquire information for their needs accurately
- Attempted to rectify the problems and to solve them appropriately. The problem was solved by having meetings to find appropriate specifications of computers and a mainframe that was needed for the company, then software to install in computers to facilitate their work, and an Internet system to facilitate the communication process and information searching process.
- Eliminate their fears of the changes of the new work process by providing staff members information to understand how to use of IT, asking IT staff members to spend time with other staff members after work to train them to get acquainted with computers and show them how to use software such as Microsoft Word, Excel, and PowerPoint, and the Internet.

The first cycle addressed and confirmed the complexity issue at CCC. The researcher was able to see the need to improve information sharing and develop decisions for action in Cycle 2.

4.4 Summary

In summary, problems in the organisation were clearly identified and the IT projects were developed to be implemented in Cycle 2 of this Action Research. The IT projects were decided upon as business solutions and were to be taken place in Cycle 2 to ensure that IT projects could help facilitate work processes and enhance the communication system amongst staff members within the organisation. Senior Management agreed on the 16 IT projects and also trusted that IT could improve business processes and the work system at CCC. The processes taken in Cycle 1 are summarised below (Fig 4.9):

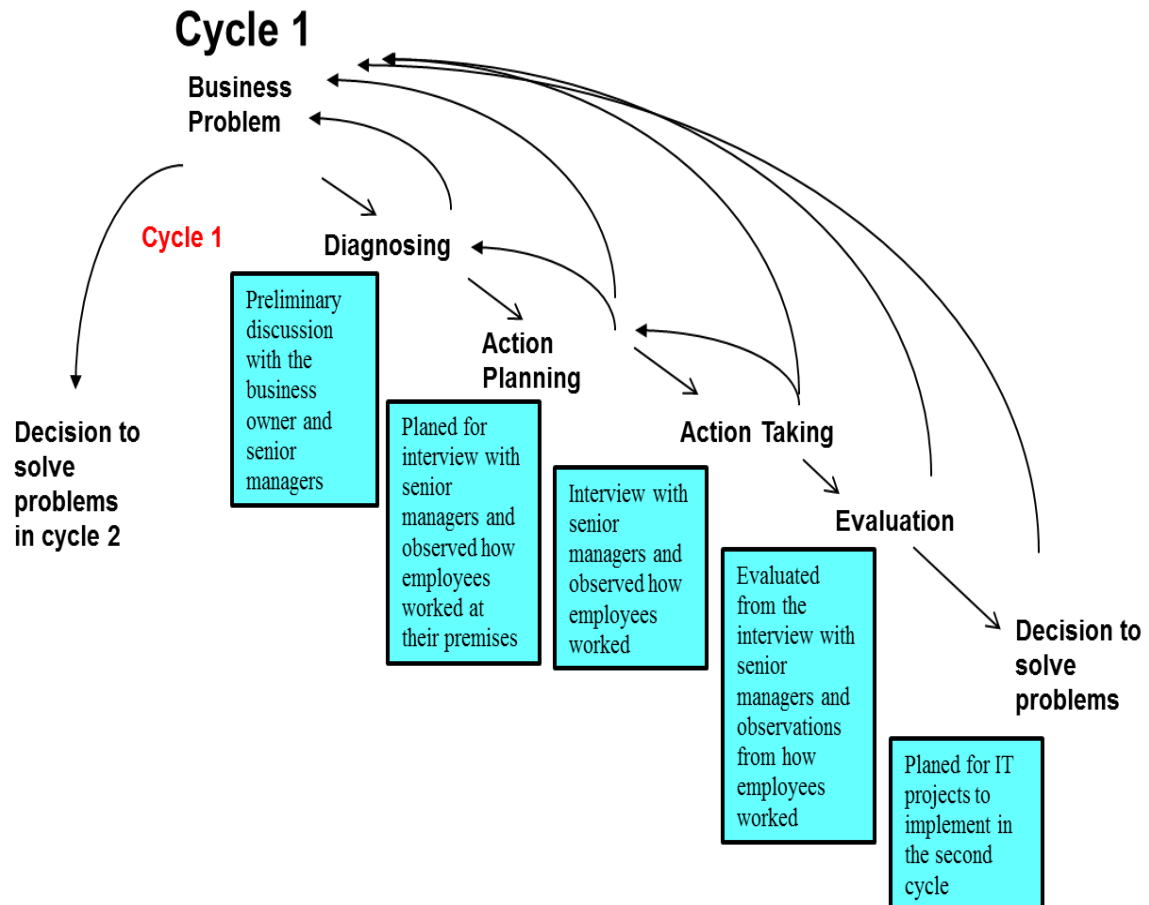


Figure 4-9: From Theory to Action

Chapter 5 presents Action Research Cycle 2, and details how IT projects were implemented and how the IT projects impacted the work system of CCC between July 2009 and January 2010.

Chapter 5

ACTION RESEARCH CYCLE 2 – THE FIRST INTERVENTION

5.1 Introduction

In the first cycle, the researcher, in collaboration with the senior managers in the CCC Company, identified the key problems within the company, planned what needed to be done, and then worked with the senior managers and the CEO to make a set of decisions about what action was to be taken in the next stage. The result of the first cycle was a decision to implement 16 IT projects, each related to solving the identified projects. In the second cycle, it was agreed that four of those projects would be implemented. This chapter tells the story of IT implementation, and uses an Action Research format to analyse and evaluate what happened.

5.2 Second cycle of action research

In the second cycle of the Action Research, the senior managers decided that the IT projects would be implanted for all staff and that all staff members had to participate in the new changes within the organisation. To understand how the IT projects affected the work process of the staff member in the organisation, observations and discussions with staff members occurred over a eight months period from June 2009 till January 2010. Figure 5.1 outlines the

phases within the Action Research. The second cycle again follows the five phases developed by Susman and Evered (1978).

5.2.1 Phase 1 – Diagnosing

When the research began, there was no one responsible for IT infrastructure and IT support in the CCC Company. The researcher approached the senior managers and the CEO and it was decided that Mr RJ would take over full responsibility as part of his other duties. The strategy had been set. The projects had been agreed on. The budget had been set. The first task in this first stage of the second cycle was to revisit the planned IT projects, understand what was required in terms of equipment and time to purchase and test both hardware and software and to then plan installation and begin the training process of staff within each of the four projects.

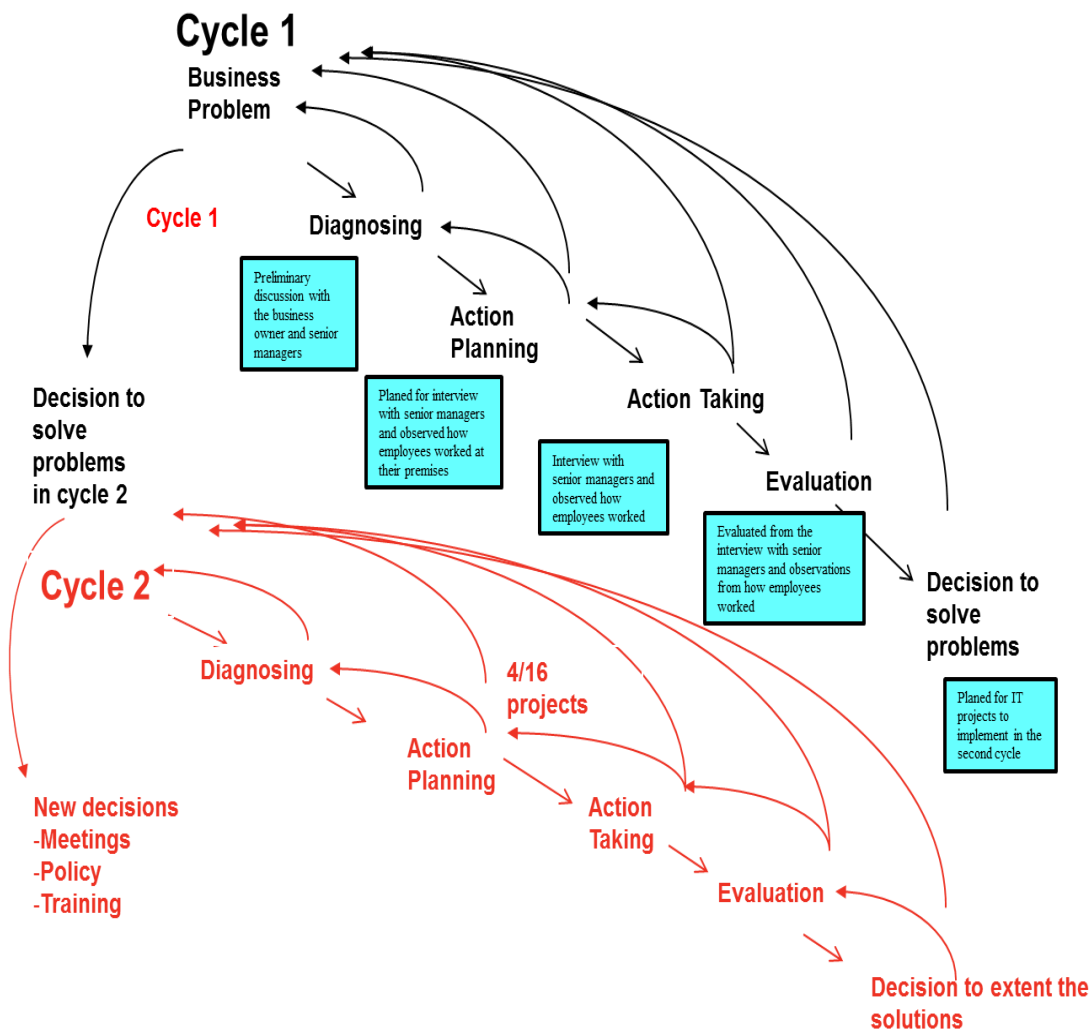


Figure 5-1: Action Research Cycle 2 – the second intervention

The researcher discussed the 16 IT projects again with senior staff members and confirmed their prioritisation into three phases as shown at the end of the previous chapter. This group also determined that this cycle would involve only four projects:

- Project 1 - Network Development in Main Office (WAN, LAN, and Wireless System);
- Project 4 - Internet system via WAN, LAN, and Wireless System;
- Project 5 - Database Management System; and
- Project 16 - Needs assessment for IT tools and equipment.

Implementation of these four IT projects began in July 2009 and continued until January 2010.

Table 5.1 presents the list of employees at CCC, who participated in this Cycle 2 of the research. The participants come from a cross-section of employees and were asked to participate by the researcher. The list below is just those who accepted the invitation to be involved. Throughout the six-month period of this phase of the research, each person was interviewed formally on a number of occasions, spoken with regularly in discussions on an informal basis, and observed in the workplace.

Table 5-1: List of staff members participating in this research

Departments	Name	Descriptions
IT	Mr Nat	Worked in IT department and provided IT support to all staff members at the CCC Company. He started his career at the CCC Company in 2005.
International sales	Mr Chai	Recently joined the CCC Company in 2007 and started his career in the international sales department.
	Ms Wi	Recently joined the CCC Company in 2007 and started his career in the international sales department.
Procurement	Ms Bee	Started her career in the procurement department in the year 2000. Her duties mainly involve international procurement.
	Ms Joop	Started her career in the procurement department in the year 2002 and assisted Ms Bee. Her duties mainly

		involve international procurement.
	Ms Nick	Recently joined the CCC Company in 2006 and assisted Ms Bee and Ms Joop in international procurement.
Domestic sales	Mr Oh	Joined the CCC Company in the year 2005 and is involved in domestic sales. His major customers are the government sector and local community.
	Ms Fon	Joined the CCC Company in the year 2005 and is involved in domestic sales. Her major customers are private enterprises. She worked with Ms Ple.
	Ms Ple	Joined the CCC Company in the year 2003 and is involved in domestic sales. Her major customers are private enterprises in Thailand.
Finance	Ms Nid	Worked in the financial department since 1998. Her main duty was as a financial controller to the CCC Company.

The next section explains the action-planning phase conducted in this research.

5.2.2 Phase 2 – Action planning

Action planning was discussed with senior staff members and a research plan was agreed to as demonstrated in Table 5.2.

Table 5-2: Action planning phase

Month	Activity Planning
July 2009	- IT infrastructures and installation process
August 2009	- Server installation - Observation, interviews, questions and answers
September 2009	- Observation, interviews, questions and answers
October 2009	- Observation, interviews, questions and answers
November 2009	- Observation, interviews, questions and answers

December 2009	- Observation, interviews, questions and answers
January 2010	- Observation, interviews, questions and answers

However this plan was dependent on another planning sequence, the planning of IT needs, evaluation, decision-making, purchasing, testing and installing. In the first month of the second cycle in this research (July 2009), preparations were also made to prepare an introduction of IT equipment in the CCC Company.

The researcher and senior managers discussed the plan for IT infrastructure and equipment. The researcher and senior managers investigated needs of employees for the use of IT and then summarised those needs. The process involved in getting the IT equipment in place was an iterative one (Fig 5.2).

Figure 5.2 shows the process that the researcher and IT managers planned, discussed and analysed until a decision was made to purchase IT equipment. The IT equipment included server, computers and accessories, WAN, LAN and wireless systems, computer software and server software.

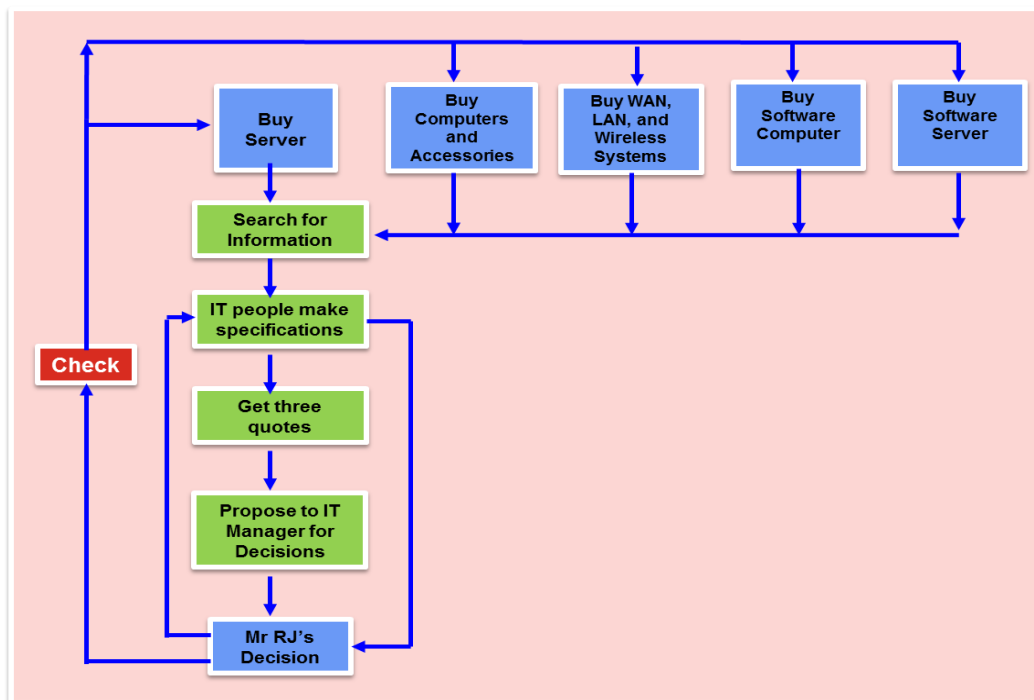


Figure 5-2: Iterative Process of Purchasing IT Equipment

The diagram shows that there were considerable iterations and discussions during each stage of the evaluation, purchasing, testing and installing of the IT hardware and software. This was a process led by the senior managers and the IT manager, in collaboration with the researcher.

The aim was to purchase the right equipment to meet the needs of the company to deal with the problems identified in the first cycle. The CEO was at pains throughout this process to emphasise that there was no overspend on the IT as he had 'heard stories of wild amounts of money being wasted on IT projects'. His adage was, 'buy only what is needed to do the job'. A key part of this decision-making process was the relationships between the researcher, the IT manager, the senior managers and the IT suppliers. In Thailand many business relationships happen according to existing business relationships or on referral from other business partners.

In this study, Guanxi was introduced to explain business relationships in this study. Guanxi is derived from Chinese culture in building up connections with people, learning how to apply their connections to the business. Guanxi refers to a personal relationship or connection and it has been presented in frameworks on relationships suitable for businessmen in the context-laden Chinese society (Chen & Chen 2004). The concept of guanxi is much richer and more complex than networks as guanxi is not only an inherent nature depending on the type of people, but also depending on the quality or level than guanxi is being built. Thanasankit (1999) showed that in the software industry in Thailand, *guanxi* relationships were not only common, but in most cases essential, in the business process. In the cycle of evaluation, purchasing, installing and evaluating the IT, both software and hardware, in CCC, the role of *guanxi* was most obvious. There was a perceived trust between the business partners, seller and purchaser, that each was getting the 'best deal'. There was no sense of being 'ripped off'.

A list of IT equipment and a description of what was eventually installed in CCC is given in Appendix C.

The LAN, WAN, Wireless systems, servers, database system and personal computers were in the process of selection in July 2009 and purchased in August 2009. Table 5.3 presents a summary of the software used at CCC.

Table 5-3: List of software used at CCC

No.	Summary of Software Used at CCC Company	Licensed	Quantity
1	Microsoft Office Standard 2007	Microsoft	50 Licenses
2	Microsoft Office Basic 2007	Microsoft	10 Licenses
3	Microsoft Windows Server 2008 Std	Microsoft	1 Licenses
4	Microsoft Windows Server 2008 Cal	Microsoft	5 Cal
5	Microsoft Windows Server 2008 Ent	Microsoft	3 Licenses
6	Microsoft Windows Server 2008 Cal	Microsoft	15 Cal
7	Microsoft Windows Server 2008 Std	Microsoft	1 Licenses
8	Microsoft Windows Server 2008 Cal	Microsoft	5 Cal
9	Microsoft Windows 7 Pro OEM	Microsoft	30 Licenses
10	Microsoft Windows Vista OEM	Microsoft	50 Licenses
11	Microsoft SQL Server Edition 2005	Microsoft	1 Licenses
12	Microsoft SQL Server Edition 2005 Cal	Microsoft	25 Cal
13	Microsoft Windows Server 2003 R2 Std/Ent	Microsoft	1 Licenses
14	Microsoft Windows Server 2003 Cal	Microsoft	5 Cal
15	Symantic Endpoint Protection 12.1	Symantec	82 Licenses
16	Symantic Endpoint Protection 12.1	Symantec	12 Licenses
17	Adobe® Photoshop® Lightroom 3.0	Adobe	1 Licenses
18	Adobe® Photoshop® CS5 for Mac	Adobe	1 Licenses
19	Adobe® Photoshop® CS5 for windows	Adobe	1 Licenses
20	Adobe® VideoStudio Pro x3	Adobe	1 Licenses
21	Adobe® Acrobat Pro	Adobe	1 Licenses
22	SolidWork premium 2009	SolidWork	2 Licenses
23	Ca Arcserve Backup r12 For windows	CA	1 Licenses
24	Auto Cad	AutoDesk	6 Licenses

Source: CCC Company (2009)

In August 2009, the server system was installed within the CCC Company. The planning team in the company and the researcher considered the server as forming the basis of the network being developed within the company.

Without a server, the development of a shared database, internal communications needs, external communications needs and therefore the potential to share information was not possible. From September 2009 to January 2010, observations, interviews, and questions and answers were planned to follow up with the installation of the IT infrastructure process. The next section discusses the action taking stage in the second cycle in this research.

5.2.3 Phase 3 – Action taking

Throughout the action-taking phase, the researcher interviewed the staff participants formally, and spent considerable time during eight months between June 2009 and January 2010, communicating informally with them and also with the senior managers. There was a planning team, in place of the researchers and senior managers and this met on a daily basis initially and then weekly throughout the six months. This team drew up a plan for the IT implementation in two parts: a) installing the IT and b) implementing the IT with the staff (Fig 5.3)

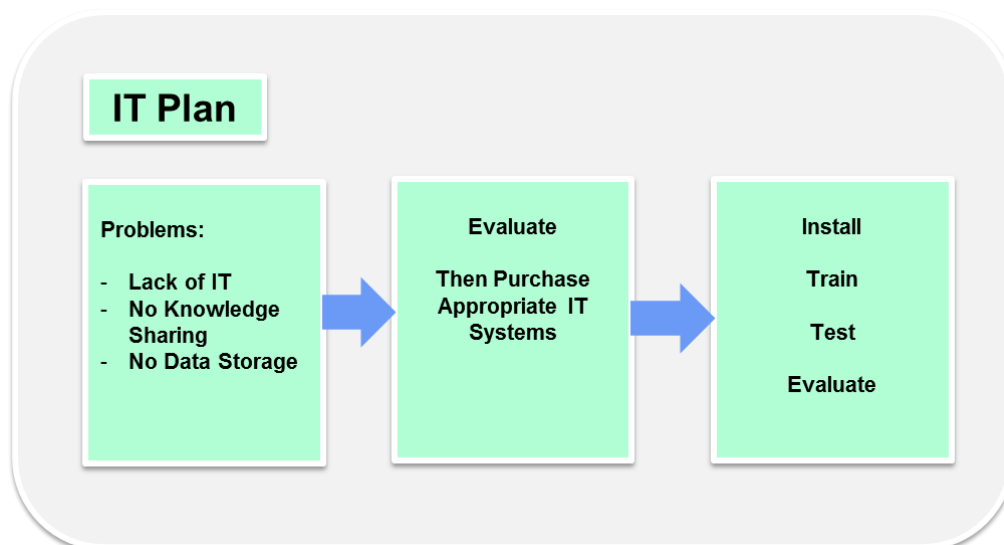


Figure 5-3: IT Planning

The initial period of action taking was intense for the researcher and the senior managers and supervisors, working on the one hand trying to get the IT in place and on the other working with the staff to get them ready to accept and then use the IT.

a) Plans - Installing the IT

In the installation plan, the researcher discussed with Mr RJ and the IT technician how to source information regarding the IT equipment. Then the IT technician sought comparative prices. The ideal was to have three quotes and compare the quality. Mr RJ mentioned that the lowest price did not mean the company would get quality products. The researcher and Mr RJ had several meetings with IT technicians before the final decision was made to purchase.

The researcher and Mr RJ discussed the server system, which had to be first installed then followed by the software for the server system. The IT company that CCC purchased their IT equipment from installed the server system and its software. The server system then had to be tested to ensure the flow of systems by the IT company and IT technicians of the CCC Company, before being connected to the LAN, WAN, and wireless systems. Then, software for the LAN, WAN, and wireless systems had to be installed to enable system operations.

Desktop computers used at the CCC Company were installed later, together with necessary software for each station. In this process, the IT technicians would have to work carefully to ensure that the program had no conflict and operated smoothly. Then all desktop computers were connected to the servers, and LAN, WAN, and wireless systems. It took about three days to install the IT equipment, software, and conduct systems testing. Figure 5.4 describes the IT equipment installation process.

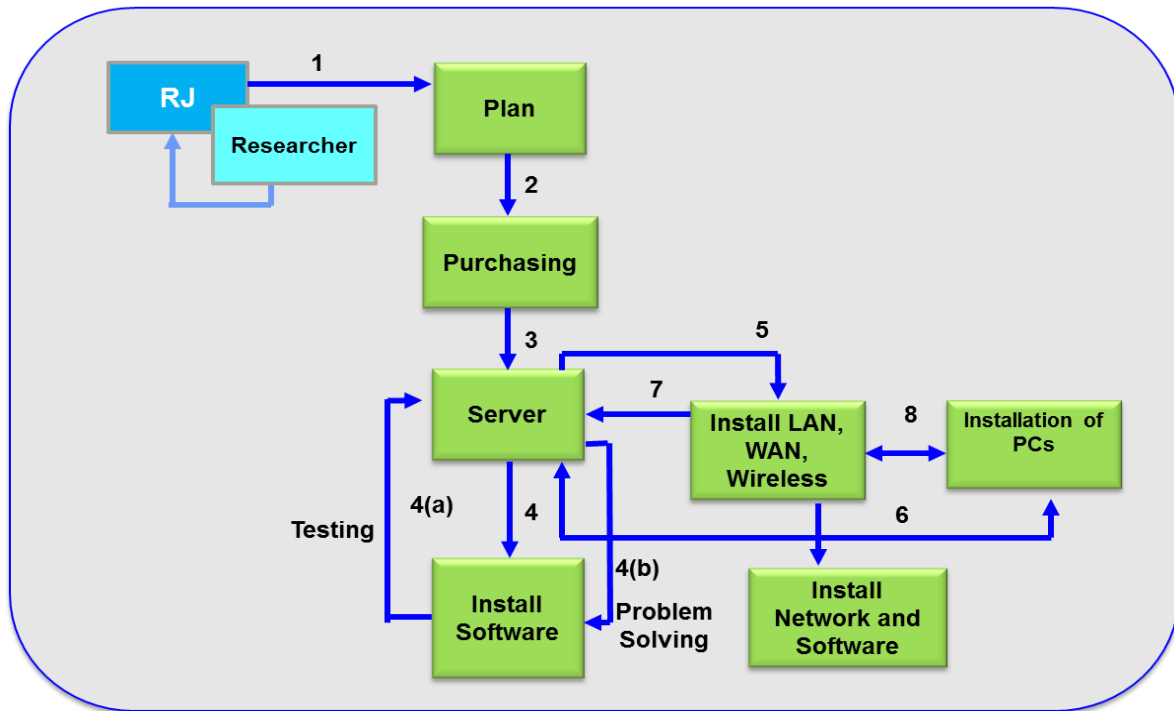


Figure 5-4: Processes of Installing IT in CCC

In the first cycle, project one, project four, project five and project sixteen were selected to be implemented in the first phase of the IT projects – the first intervention using IT to develop change to try and solve the key business issues affecting the performance of the company. The reasons given by the senior staff, the researcher and the IT Managers to select the chosen projects were because they were considered by the senior staff and by the researcher to have the best chance to produce some quick positive outcomes in a short period of time. It was also deemed necessary to choose these particular projects because they would form the foundation for all of the other projects that had been planned at the end of cycle in the second and third phases of the IT implementation in the company.

The results of the implementation of these four IT projects in phase one, the senior managers were convinced, would contribute to the foundation for the implementation of IT projects in phase two. Phase two was still to be planned in detail and it had been decided would be determined by the outcomes of the first phase of IT implementation. The IT projects in phase three would take more time than the IT projects in phase one and two because the IT projects there were more sophisticated, required more investment, and needed specialists to get involved in the improvement processes. They were especially concerned about time as the

project went on based on the time required technically to set up the server and the LAN network (Image 5.1)

Image 5.1: Testing the Server



Image 5.1 shows the IT manager and IT technician examining the server systems to ensure the workability of the IT systems at the CCC Company.

The needs assessment for IT tools and equipment [project sixteen] was conducted to study the needs of staff members and to seek the opinions from the staff members about how the organisation could facilitate more efficient work practices. The management and the CEO realised that an unplanned purchase of IT infrastructure in the organisation would affect the costs of the company and in its first year the profits. He was concerned to ensure the investment was well spent. He noted that there had been ‘some overspending on other forms of equipment in the past’ and this had negatively affected operations. The senior managers expected that investing in IT infrastructure also had to enable performance efficiencies in the long run. The CEO and senior management agreed that it was necessary to acquire good quality technology and advanced IT infrastructure, as this ‘could be a good decision for the organisation in the long run’. However, appropriate technology had to be investigated before an organisation could make decisions to invest in IT systems. A mutual understanding of IT utilisation is important to all staff members to guide them to follow the organisation’s aims

and objectives and this, the researcher argued with the CEO, was essential to align staff needs and work processes with the capabilities of the IT. Without proper planning, the IT infrastructure investment would be for nothing. The management then expected to see improvement and to understand how IT supported the business operations.

Several meetings were to be held to finalise what IT systems were required in the different stages and the sixteen IT projects in Table 4.2 which had been proposed to be implemented during the year 2009 – 2011 [IT projects one to sixteen] were confirmed. Research in the company by the researcher also showed that what was proposed was a close match with the CEO's desire to increase employees' work output and their efficiency leading to better organisational performance.

The senior staff and the researcher collaboratively decided that the network development in the main office would create a data warehouse for the company. The data warehouse would keep all necessary documents for the company. Staff members in the organisation could then use that system to share information and avoid duplication of administrative work as well as minimise the time it previously took to individually study information required to be known about the Fire Trucks and their assembly. The network development, it was believed, would minimise the workload of senior staff members and allow time for them to concentrate on other important duties such as to increase sales, plan for market penetration, find new markets, and increase customer service satisfaction.

Image 5.2 illustrates the installation testing of the new server and LAN network. The focus was on testing the server's efficiency and capacity to meet the needs of the workforce. The server systems were tested and adjudged by the senior managers to be ready to use by staff in performing their work functions. Some training was required but the net effect of the system's use by the staff was that they all used their computers to perform simple word processing and spreadsheet tasks to learn how to use the computers for their work. Much of the training was collaborative with the more IT savvy staff, the researcher, and the IT managers being around and working with staff to show what could be done with the computers they were given.

Image 5.2: Server installation process



Image 5.2 shows the IT technician testing the systems prior to the actual introduction of IT to the employees at the CCC Company.

Image 5.3: Servers' maintenance process



In project four, the plan was to develop an Internet system within the company via a Wired Area Network (WAN), a Local Area Network (LAN), and a wireless network in the various locations of the company. The objective in implementing the Internet system was to facilitate both the communication systems and capability within and outside the organisation. Simultaneously with the implementation of the server in August 2009, the

WAN, LAN and wireless networks were built, tested and finally implemented across the company. The researcher and the senior staff in the company believed that staff members would then be 'more comfortable to communicate amongst the staff members as well as with management level more efficiently'.

Project five involved the building of a database and this ultimately became a data warehouse over the next twelve months. The senior managers and especially the researcher perceived that the problems of information sharing, the elimination of duplicated work, and quicker learning about existing company products, new products and new parts, would begin to resolve the existing identified problems in the company. They believed that this database would enable the staff members to store their information in the database of the company. Each staff member would then, it was hoped, edit, retrieve, and organise their information in the company's system. The information stored in the data warehouse would be later organised into folders and could be indexed for future use. Information is important and could be repeatedly used many times. Each staff member could search for information themselves from the database and only consult with senior staff members when really necessary. The researcher and the senior managers believed that this alone would have a big impact in the company and enhance relationships up and down the supply chain with better knowledge and speedier links with clients.

Basic software such as Microsoft Office [Microsoft Word, Excel, and PowerPoint] was introduced to all staff members to ensure that they used the same versions in all computer stations within the organisation. Different software versions had caused a lot of trouble in the past including conflicts in formats and in print outcomes. Most of the staff members knew only the basic skills of the computer and they had been defensive, avoiding changes in the organisation.

The installation process of the new company server was completed in the first week of August 2009, in conjunction with the WAN, LAN and wireless network. Staff members at the CCC Company started using the 50 new computers and the server at the same time. The IT manager and the senior managers, together with the researcher, had planned the installation of a LAN at the same time as the server was put online to enable staff to immediately use the system. The system launch was highly visible and openly supported by the CEO and the senior managers, who also encouraged everyone to try to use it. There was some, albeit minimal, training provided.

b) Working with the staff:

Interviews with the technical staff were held in July 2009 to understand the readiness of the IT infrastructure from their perspective prior to the introduction of IT at the CCC Company. Mr Nat, the key IT staff member at the company, shared his opinion stating, 'there was a problem at the beginning as only few computer sets were available at the CCC Company for employees to use for their work. Most employees processed their work manually. They recorded information by hand and kept them manually'. He continued: 'All forms used were designed and offset printed from the printing company. The form designs were not standardised and they were changed if the printing company changed their employees'. This analysis supported the perceptions recognised by the senior managers and reported in the first cycle.

Also in July 2009, and again prior to the introduction of the actual IT, the researcher started to learn more about the ways staff members worked and how they used information. The researcher gathered information from a number of departments in CCC and did it in an ad hoc manner to try and understand what happens and what can happen on any day and at any time. The intention here was not to do a detailed analysis of the way people worked and see if their processes were efficient or not based on a particular model, but rather the intent was to understand what they did and why. The informality of the approach used and the deliberate efforts not to look as if everyone was being watched all of the time, was used to give the staff flexibility and to allow them to participate in this research more comfortably. The research was designed to see if implementation of IT changed what they did from their perception and from the observations of the senior managers and supervisors. The intention here was never to 'follow' everyone, at all times and look specifically at workflows in particular. That, in itself, would make another piece of interesting research. This is a study on strategic impact of IT and so the intention was to evaluate perceptions and then look at the outcomes at the end.

The researcher started having a conversation with Mr Nat, the IT staff member. Mr Nat explained from his experience that there were only a few computer sets and only one modem used for all of the employees at the company. The modem was located at the international procurement department and was for the external communication process between CCC and its suppliers or customers. However, he noted, the facilities and IT equipment were insufficient for usage at the Company. Other departments would also like to use computers and the Internet as well. This problem had been recognised in the company since 2004. From

observations and conversations with staff, the researcher found that some newly graduated staff members liked to use the Internet for data searching or to contact their customers as well. The researcher found that some of them had to buy their own pre-paid cards for Internet connection at their own expense to facilitate their work.

Mr Nat explained that he was unable to provide efficient IT support to all staff members at that time (July 2009). That was because the organisation did not have sufficient budget to provide IT technology. Also, the management level did not see that IT was crucial to all staff members. Mr Nat explained that the company policy was not clear and he commented that:

We work for the company. The company should provide support to facilitate work, especially IT support. I think that the management level was not sure whether IT infrastructures could help support work at our company. They needed some evidence to prove whether IT infrastructures were worth the investment. We are stepping into a new era of our information technology environment. The introduction of IT is a new challenge for our company. We have new buildings, which are in the construction process. We need to have good IT systems for our future expansion.

The existing IT system was not planned and there was no IT department in the past. The IT technician was only able to provide basic support to the staff members. Some applications being utilised before 2004 were basic programs such as Microsoft Excel and Word. However, he noted, only a few people used Microsoft Excel and Word programs. Mr. Nat further explained that even though some people used the Excel and Microsoft Word programs, they used different versions. Some staff members used version 2003 and some staff members used version 2007. Also, some software used at the company before the year 2004 was basic and some were only designed from basic programs such as Excel and Microsoft Word. The staff regularly asked each other about the differences of functions of the programs but they never sought to fine tune and use the same version. In addition, the outcomes of the printouts from different software versions were regularly in different formats.

Mr Nat also shared his perspective that knowledge sharing was limited amongst staff members. Each staff member found that it was difficult to learn from other staff members, especially when they needed to obtain information immediately.

Mr Nat suggested that the CCC Company should have a clear policy that employees could follow. He also suggested that the CCC Company should recruit more employees, especially for the IT department. Many positions were filled but none were recruited into the IT department. In addition, he commented that there should be some motivation at work. Some senior staff members, he noted, would 'not like to learn as they trusted working in the traditional style – with paper'. Senior staff members only used information in printed format for consultations and only when some senior staff members inquired and only asked new staff members to work on computers on their behalf. Mr. Nat stated that:

Each employee used stand-alone computers in the past. I alone had initiated a small project to include some of the computer systems into a Local Area Network. I only connected the Internet for one department, at the international procurement department, because they had to contact suppliers from other countries as well as the customers.

Most new staff members learned the work processes of the company and tried to understand the necessary information within the organisation, relevant to their work, on their own. The staff indicated in discussions that the learning process was difficult in the first year, when a new member started his career at CCC. However, they noted that the supervisors would assist new staff members. Supervisors regularly provided guidance to his new subordinates when they got lost or were having trouble meeting the work needs and processes of the company. These new staff members said that they and others regularly asked similar questions and they regularly repeated the same queries. There was no influence or desire to improve their work process and this had become the organisational culture within the company.

From the interview with Mr Nat, and from informal discussions at the early stage with staff, the researcher learned basic information about the work culture in CCC. The researcher was assured to respond to both staff and the senior managers that the introduction of new and more IT would benefit the employees in their work and also benefit the company overall. The first project needed before business processes could change and have any effect was to set up the new server system. This done and tested, the company purchased 50 computer sets in the first lot to support work systems. The server system was installed in August 2009.

In July and August 2009, the researcher observed that new employees were excited by the new computers and with the potential they believed would happen as a result of the new server and software systems installed. However, senior staff members did not feel they would

like to participate. Some senior staff members opposed the new IT and use of it because they said that they 'had gotten used to the manual systems' or traditional systems used in the company. They said that they 'trusted the traditional systems' and felt that these older ways 'could be more productive than the new systems with computer usage'. This represented an apparent difference of opinion amongst the senior staff. Some staff supported the initiative and this group were not in favour as quickly as had been planned and implanted. Essentially they said they were 'cautious'. The CEO's strategic decision was one that challenged existing work practices and challenged the ways of working that those who had been there a long time, liked. Essentially there was a strategy and through the early phases of implementation of actions to get to the strategic outcomes intended, there was some contesting and attempts at modification of the strategy.

The old were challenging the new. But the impetus of the acceptance of the new systems by staff was aligning their actions, and therefore their work, with the strategy as intended. Practice was driving the strategy implementation.

At the beginning of the implementation process, new staff members said they were 'satisfied working with the computers' and became more so as they became 'more acquainted with the computer systems'. Newer staff members and more recent graduates from the Thai universities started sharing information amongst themselves and began a process of mutual training of each other in developing letters and billing formats to use. The researcher found that the computers and IT systems were impacting on employees' behavior quite rapidly and positively. In discussions with the researcher the staff indicated quite clearly they were enjoying the change even though the amount of work seemed more as they learnt, but that 'the different way of working was a good change'. One even said: 'the change makes me want to keep trying new things and ... I even stay late after work and keep on trying'. Some employees then could use IT infrastructure effectively while some of them had started learning how to operate computer systems, each seemingly fostering an environment of wanting to do more.

From September till December 2009, the researcher undertook follow up interviews with the staff to get their perceptions of the effects of the introduction of IT processes. In one specific example the researcher worked with staff in the Sales Department, which is divided into two teams. The two teams focus in different areas, one in international markets and the other in domestic markets. Senior staff members at the management level in the company had

previously discussed with the researcher that it is important for staff members to know and fully understand all products and parts associated with Fire Trucks being assembled by the company. This was an especially important task for the Sales team staff members. On the job training in this department traditionally was all about the products. The Sales teams had to learn and know about the company's products and understand how each product, or part, is used. For example with respect to the fire pump, the Sales teams had to be able to fully explain to customers the characteristics of fire pump products, models, and brands that the company was carrying and they had to be able to compare them with different brands as demonstrated in Figure 5.5.

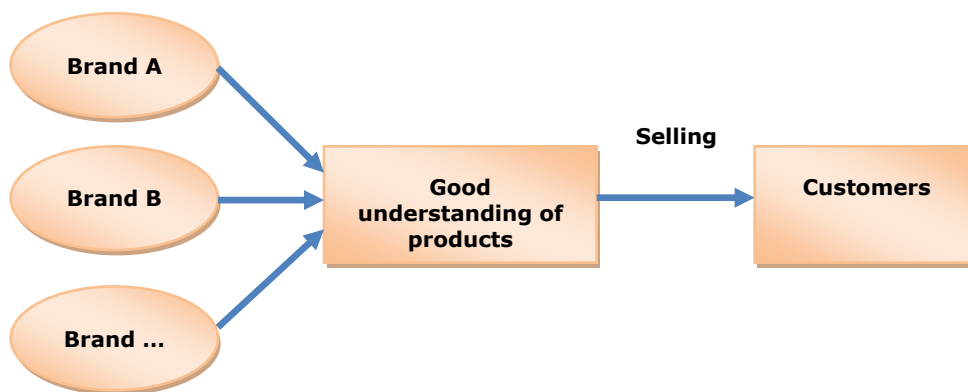


Figure 5-5: Understanding of product characteristics

The Sales teams had to be able to explain this material even though there was no database to enable them to do this. They had to rely on the magazines and brochures of each product. Each new staff member has to develop that knowledge over time. Little information was shared. Staff members needed to gain experience to gain trust from the customers. The products are unique and niche to the markets. The sale representatives of the company had to know products well and needed to have many attempts to sell the products. Mr Chai learned the work processes and created knowledge on his own. He said that 'he was in difficult situation in the first year when he started his career at the CCC Company. However, his supervisor was helpful and always guided him when he got lost'. He further explained that 'he liked the work and he would like to learn'. His supervisor spent much time with him in the beginning. Mr Chai commented that:

I only know about 60%. I don't know all products of the company. The products are made-to-order to the customers. The components of the products can therefore change

according to the specs (sic) required by the customers. I only can sell what I know.

At the international sales department, one staff member explained that customers might have their own specifications but the company staff had to know all information and be able to offer them more information than what the customers had. The price was one of the major components that had to be negotiated but the sale representatives had to know the products well enough to have more negotiation power than the customers. All the required information had to be available and accessible. There had been no system or single repository of information to enable this.

Apart from Mr Chai, Ms Wi also worked in the same department. Ms Wi also confirmed, from her perspective, that her duties required 'sufficient understanding of the products and components of products'. Sale representatives, she said, had to know very well how the products could perform and know how to provide quality service to the customers. She said that 'the company's products are unique and relationship with the customers had to be well established and maintained'. After using the IT for a few months, she said that the new database and the forms and tables that 'we are now using, make our jobs easier. The information we need is there all together and is easier to find'.

In the Procurement department, sourcing materials was one major duty. Information had to be accurate and synchronised between the company and suppliers to avoid misunderstanding and unexpected costs that could be incurred in the procurement process. The order management system had to be rectified with the new IT systems coming in because the process involved money and transactions and these relied on accurate information. The financial controllers and the staff members in the procurement department had to work closely with all other staff to avoid confusion, and minimise problems and costs in the organisation. One member of that department noted that the 'IT systems have helped us a great deal. We are now able to keep control of what people are doing cost-wise'.

One of the key roles of the new IT systems was to use the new databases to bring all of the information together and use charts and tables shared across all staff, to enable the comparison to be done quicker and faster. However, there was another issue in that the costs of these products varied and there were poor relationships in the company between the Sales department and the Financial Department who settled accounts. There were many mistakes arising in the selling process, some of which were because of poor knowledge on the part of

Sales staff and associated misunderstanding with clients, although most problems involved the Financial Department.

The company sold Fire Trucks that were assembled and each product was somewhat unique and used different auto parts and components in different specifications. The selling process involved both the Procurement and Financial departments. Mr Chai explained that all departments had to work well together and the information had to be accessible, accurate, and reliable to avoid mistakes or confusion to the customers. At the same time, the orders had to be accurate to avoid confusion to the suppliers. Confusions could lead to an increase in costs to the CCC Company. Also, the price could be sensitive to the customers. There had been no systems in place to bring all three departments together, which were the Financial department, the Sales department, and the Procurement department. The staff interviewed in this research agreed that the new IT systems database enabled each of the three departments to see what each other needed to know and integrated the procurement, sales and financial aspects of the fire truck ordering and selling process. They noted that 'what they needed to know was easier'. They said that matching Sales with the processes of finance/accounts and with procurement made their relationships with clients 'more effective'.

Procurement staff members in discussions with the researcher also explained from their experience that all duties and responsibilities were guided initially by on-the-job-training. In some cases, Ms Wi noted, she had to wait for her supervisor to direct and guide her about what to do. Ms Wi and others interviewed in the first six months all noted that the new computers and the new systems were a great help as new information could be found. One new person employed in this period confirmed that getting access to information 'was easy'.

The researcher also discovered that in the company, there were no official meetings. Ms Nick explained that they only gathered together and discussed matters of work unofficially amongst the people in the same department in order to solve problems. Employees in different departments had their own duties and responsibilities. However, when staff members worked together, they needed to understand the processes of others. The company operated in separate areas, an observation confirmed by staff from the most junior to the most senior in the company. Ms Nick, Ms Wi and others commented that the news computers and the database enabled them to communicate with each other more easily. 'We can talk to other departments in an easier way without having to leave our desks and without getting permission of the supervisors'.

Information about the business was important in the organisation and had to be well organised. As the nature of the business was dynamic, each department worked independently. There could be some conflicts when they had to work together. Apart from Ms Nick, Ms Joop also worked in the same department. Ms Joop added in one interview that most of the problems that she observed 'were to do with the coordination within the organisation'. Communication was the major problem, she noted. Ms Joop regularly observed the miscommunication problem and she explained that she regularly encountered 'unexpected communication problems'. For example, her co-partner in her department was sick one day and had not reported the progress of her work to anyone. Ms Joop was in a difficult situation to follow up with her colleague's work. Ms Joop then had to wait until her co-partner got back to work so that the company could continue with that particular work process. Coordination was important in the organisation, especially in the dynamic environment of the present. Ms Joop noted that with the new computers, they were logging their work on the system and so the problem she described 'was going away'. However it 'was not yet perfect'; she continued 'but it will get better'.

In the domestic sales department, each staff member had different responsibilities at work. Ms Fon, Ms Ple and Mr Oh from the domestic sales department were interviewed as part of this research. Each participant in this domestic sales department has their own job description yet they have to share their responsibilities. Coordination and understanding each other were important to help them to work well with one another. To coordinate work well, Ms Fon explained that some of the work responsibilities had to be recorded as a manual script or written in documents so that other staff members in the same department could continue their work without the word program 'crashing'. Ms Fon said that some problems existed at work with the information in the organisation in that 'some staff members only understand their own process'. She continued, 'they did not share information with their co-partners'. This made it difficult for them to follow up with their customers.

The staff members from the domestic sales department encountered similar issues; that some information was in other departments and they found it difficult to access that information themselves. They had to ask their supervisors and then wait for permission before they could receive the required information. This always took a long time. If permission was not granted, they could not access that information. In worse case situations, they had to develop a new piece of information for their own use. This, one of the staff said, often 'repeated what

someone else had already done'. This could delay the selling process and the customers could change their mind and go and shop with other companies. Since the products in the company are unique, these staff members had to ensure they were up to date with company product information before they explained it to customers. Some information was available in the computer. However, information was still kept with a person. From this point, they believed, the new IT infrastructure and the introduction of better IT systems was helping to solve the communication problems and ease the work process problems in the organisation such as personal conflicts with other staff members or minimise the lead-time in obtaining information from other staff members or departments.

After several meetings and discussions during the business expansion, especially in the September-December 2009 period, the researcher followed the progress of IT projects to finalisation and reported on the progress of the four IT projects to senior management. The researcher had to understand if the IT projects implemented supported the business operations, thus contributing to the efficient operations within the company and with its supply chain.

With the new changes in the company, the researcher discovered through interviews with staff that they believed that these projects were an opportunity to improve the communication systems within the company. Most staff members were aware of communication obstacles that were not clearly identified. They were obstructed in their intentions to work with others but could not share information when they needed to. Time was an important issue for them to meet the deadline of the customers and lack of communications affected this. Staff members in the new generation were aware of the importance of the improved IT. They said that they were happy that the researcher could approach them and introduce the value of the IT projects to them to help them to improve their work efficiency. Staff were generally very happy to participate in every project implemented in the first six months of the IT projects. Their perception in the interviews was that positive outcomes would eventuate from the changes put in place.

However, some senior staff members did not want to change their working style as they feared learning new things and they were afraid of adding new processes into their work routines. Some of the older staff actually said that 'they didn't want to change'. They felt that the 'IT projects would add more work' for them. From observations throughout the six months of this cycle of research, the researcher reckoned that some staff members attempted

to learn as much as possible as they were from the younger generation and new to the company. They knew that computer systems could assist their work. However, some senior staff members had tried to avoid learning and using computer systems in the beginning and rather assigned the work to the new staff members to work on the computers for them. When staff members regularly saw the outcomes of using the new computers, systems and database over the first implementation period, they developed more self-interest and increasingly attempted to get involved in using the computer systems. The senior member showed their interest by asking staff members to show them how to work on the computer as well as seeking some basic instructions on how to use Microsoft Office on the computers.

The researcher and senior managers encountered some resistance to change from the staff members at the beginning, especially in the first month of IT implementation. This was because some senior staff members said that they did not want to participate in the new change and added that they would 'have more important tasks to undertake'. One of the senior staff indicated that they feared that 'IT would replace their work and they would lose their job'. Over time this changed and in interviews they increasingly were positive about all the changes put in place.

The researcher also interviewed suppliers and clients of the CCC Company to get their perspective of the relationship with the company and later to understand their perspective of how things changed during the twelve months of the research. One perspective of suppliers and customers towards the implementation of IT projects was from Ms Sara, a Machinery Section Manager at ITC Thailand, a major customer and supplier of the CCC Company. ITC Thailand is an international trading agent company and has variety of interests in CCC's products. ITC has many branches and the main company is located in India. Other branches were in China, and Vietnam. Under Ms Sara's responsibility, the major products that she was interested in were Fire Trucks, fire extinguisher components, machines, and manufacturing equipment. Ms Sara had two roles in her relationship with the CCC Company, as an international agent for sales and as a supplier at the same time. ITC Thailand and the CCC Company had experienced a good relationship for approximately twelve years.

ITC was a big corporation and they had no problems with the communication system amongst their international branches. They had efficient IT systems in their organisation so that their staff members could contact each other internally and also contact their customers in other countries. Ms Sara said that her organisation was aware of the importance of communication

processes and operational processes in other countries. The only way that the main office could learn from other international branches was to report through communication infrastructures. However, in the Bangkok branch, each employee had to report his/her daily work responsibilities through the company's IT systems to inform their supervisor level.

ITC had also developed their IT systems to assist their employees to learn about their organisation and all the products and services across departments. She would directly contact the CCC Company and inform them when ITC's customers had problems with the products. Some of the customers in other countries had good knowledge of their products. They often required the adoption of international standards to guarantee the products, to assure sales through Ms Sara and ITC. It was the responsibility of the CCC Company to ensure the quality of products to customers and new clients. On some occasions, it could take a long time for the CCC Company to organise sufficient information for customers. Ms Sara explained that:

The products we ordered from the CCC Company were mostly made-to-order products. Customers set their own product specifications. We had to communicate with the international sales department at the CCC Company to organise information to the customers. It was often slow.

Ms Sara mentioned that she had a long relationship with the CCC Company because it had maintained the quality of its products. The communication process with the CCC Company was not always good but had improved a little in the past few years. She was keen for the CCC Company to improve their communications even more to make relationships better and faster. The senior management and the researcher hoped the new IT projects would facilitate this relationship. Evidence collected throughout the first six months certainly indicated that relationships and communications were getting better. Ms Sara had noted changes and improvements and could 'get through to staff faster'. She also said that 'responses to her queries were faster'.

The researcher also had several opportunities during the six months of this phase of the project to visit some customers with the sales staff as well as to meet the customers at the CCC premises on several occasions. Mr Rat was one of the local customers in Thailand. As the end user, Mr Rat explained that he used IT systems and the Internet to search for basic information when he needed information about the Fire Truck and extinguisher products. However, his organisation always had specification information at hand. Mr Rat had to find additional information to support his decision making to purchase for his organisation. Partial

information was derived from the Internet. However, the major information came from the CCC Company, as well as other companies, offered in the Terms of Reference (TOR) to win the bid to sell their products. Mr Rat was concerned that it was sometimes not as easy to get reliable information from some CCC staff but over the past few months he said ‘things are getting much better and faster. Information I need I can get’.

In a discussion with the sales staff members, the researcher heard that they believed that Mr Rat was satisfied with the services given to him by staff in the CCC Company. He mentioned that the products were regularly taken care of by the service staff members and the sales team. Mr Rat also said at one visit that the communication process had improved and the sales team was efficient and generally met the requirements of him as the customer. The sales team said they were able to explain the products better after the IT had been put in place.

One of the interesting revelations in these interviews with the sales staff related to the use of standardised PowerPoint presentations. In Chapter 2, within the discussion about ‘strategy as practice’, Mr Rat and Mr Chai said similarly that PowerPoint use was an artefact of strategy implementation, which could be as effective in process as any static artefact such as a document. The sales staff saw the opportunity in standardised PowerPoint presentations – the value of each person having the same information. The IT provided them with the value they expected in their work. In essence, the strategy was being institutionalised in company practices and without continually mentioning it, the strategy was having a clear affect.

In terms of the operations of the company, these effects up and down the CCC supply chain (Fig 5.6) were achieving what the CEO/Owner had wanted – better communications, better business relationships and more effective sales and ordering.

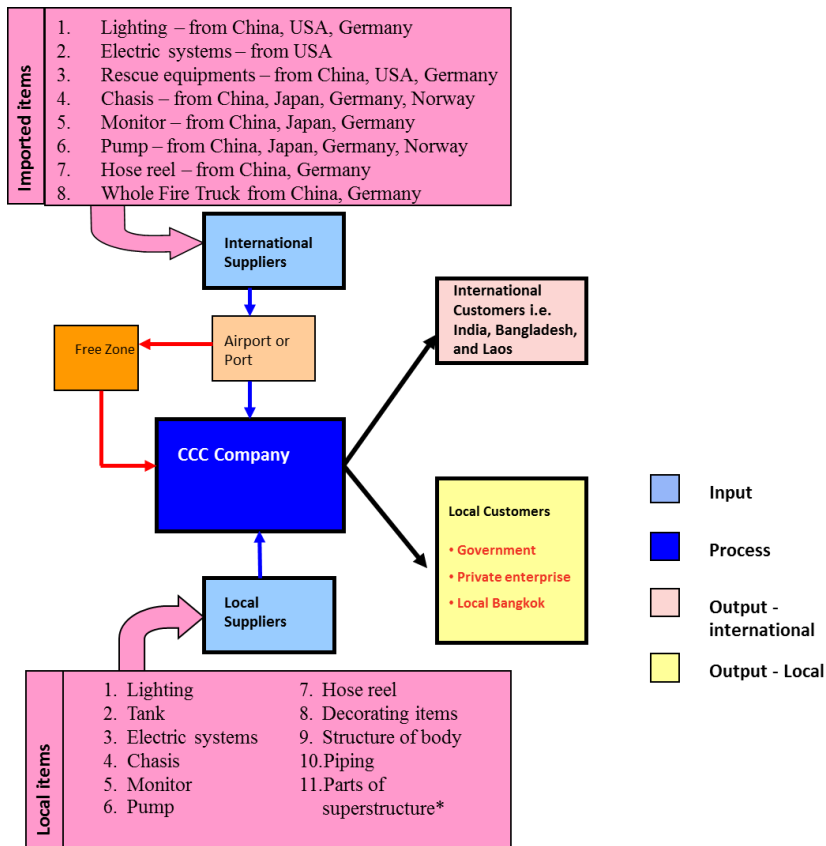


Figure 5-6: Supply chain in Fire Truck business

Figure 5.7 demonstrates the supply chain of the CCC Company, and it shows how the pathways of supplies from the suppliers to CCC. The supplies are from both international and domestic suppliers. After the CCC Company has assembled the fire trucks, they are then sold and delivered to both domestic and international clients. If the fire trucks are sold to international markets, they are usually sold through dealers or traders, or directly to the customers.

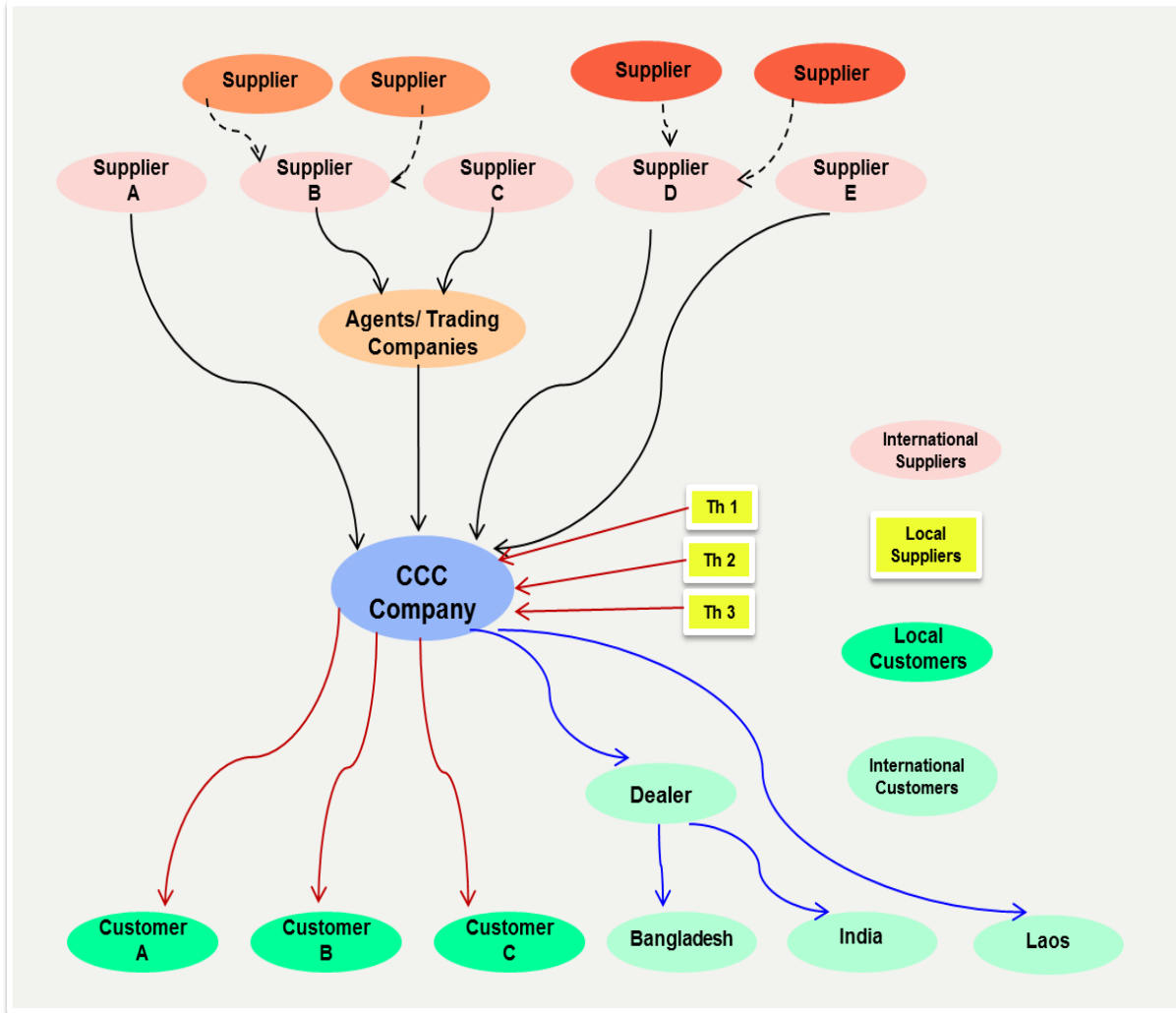


Figure 5-7: Supply Chain of the CCC Company (Diagrammatic)

The information provided by the two organisations, both ITC and Mr Rat's organisation, were also useful for the CEO and senior managers to understand and then decide about company IT policy development and how the implementation of IT projects to improve operational process and administration might work effectively at the CCC Company. One of the key outcomes of these discussions between the researcher and the clients of the company and then with the CEO and the senior managers, was the role of policy and the need within CCC to have a clear and effective policy to accompany the IT projects. It became increasingly obvious over the final three months of the implementation of this cycle of IT projects that one of the next decisions to take into the next round of action and thus in the research was to do with company IT policy.

The company needed participation from their employees to make the implementation work effectively and gain the benefits they expected from their investments. An initial evaluation of the effects of the IT projects after three months was reported to the CEO and senior managers. The research reported that it appeared that there was evidence that the new IT infrastructure was leading to a better flow of communication amongst staff members within the organisation and that more and more staff were using the system and their acceptance of it was increasing. The next section discusses the evaluation of the first four projects at the end of the six-month period as a basis to understand what the company should do next.

5.3.4 Phase 4 - Evaluating

In cycle 2 of this research – the first stage intervention, interviews with and observation of staff members at work, and interviews with supervisors and senior managers were made to understand the effects of the four projects within the company. The actions and outcomes are summarised as follows:

Cycle 2 Implementation of IT projects

Action

- Implementation of IT projects that were developed in cycle 1
- Observed while the staff members were at work

The major initial problems with the implementation process were that the IT department had insufficient staff members. There were only two people to provide IT support to all CCC staff. The IT technician said that his major duty was to provide IT support, and that some of the administrative work had to be completed after working hours or during holidays. The IT projects were also affected initially as the lack of staff meant that emergency tasks happened unexpectedly and had to be attended to as a matter of urgency. Since there were only two people working in the IT department, they were overloaded with work and their daily tasks could not easily be completed.

The IT technician reported that his duties and responsibilities at work were greater than the job description of any IT staff member he knew. He also had other duties, which were not included in the IT job description to support IT work in the organisation. This, he said,

caused delays in his IT support duties. One of the outcomes of the researcher being an active participant in the IT projects in the company was to identify this problem, report it to the senior managers who talked to the CEO, and the situation was rectified once the server had been installed. The senior staff recognised that without adequate support the projects and therefore the investment made could be adversely affected.

The outcomes of the first stage of implementation of the IT projects in the CCC Company were:

Review/outcomes

- Staff members started using a computer at their workstation rather than waiting for other staff members who were competent with computers to operate the computer for their work tasks.
- Staff members stayed late at the office in the first couple of months after implementation of the 4 IT projects.
- Staff members worked more accurately and efficiently.
- Computer skills improved and staff members felt comfortable to operate computers and understand the importance of using computers.
- Staff members found they were easy to access information faster due to a better database management system.
- The complexity in work processes decreased and was simplified by the use of IT.
- A better mutual understanding of staff members towards the use of IT systems and equipment.
- Staff members could retrieve information more rapidly.
- Suppliers received orders in a timely and accurate manner.

Review/outcomes (continues)

- Customers were satisfied with communication systems and processes as they could receive information in a timely and accurate manner.
- Staff members work more collaboratively through the network development.
- Duplicate work diminished.
- Faster learning about existing company products, new products, and new parts occurred.
- The data warehouse has more substantive information that could be shared amongst staff members within the organisation.
- Increases in employees' work output and efficiency led to better organisational performance.
- The workload of senior staff members was minimised, allowing time for them to concentrate on other important duties such as increasing sales, planning for market penetration, finding new markets, and increasing customer service satisfaction.
- The Internet system was to facilitate both the communication system and capability within and outside the CCC Company.
- Each staff members could search for information from the database, thus only consulting with senior staff members when necessary.
- Staff members were 'more comfortable to communicate amongst staff members as well as with management more efficiently'.
- Staff members developed basic skills computer usage.

The following section discusses what was learned from the second cycle and contributes to the learning and decisions for future actions at the CCC Company.

5.3.5 Phase 5 – Specifying learning (Decisions for the next round of implementation)

In the international sales department, staff members were still in a position to learn information from senior employees. The learning process was always in progress and never finished. One staff member said the IT Projects 'have made this easier'. However, they could

only still handle basic specifications. Complicated orders were, however, handled by senior staff members. The senior staff members would handle these more complicated orders and hand them over when they could complete deals with the customers. The problems in the sales department were selling techniques. Different customers required different skills. Techniques were difficult to learn but required more and more experience to gain better negotiation skills. Mr Chai and Ms Wi both said that they still had to learn from senior managers over a long period of time. Staff members from the international sales department said that sharing information could be helpful for the new staff members to learn selling techniques and would be useful to enable them to better deal with complex orders. One of them said that 'it's only a matter of time and of trust'.

Cooperation at work through the use of the new IT systems, the sales staff said, could also provide support for staff members in the same department. When one staff member was occupied with some other duties, another member could progress their work continuously. Staff members from the international sales department said that they could learn the product development process better, which had also been observed by the researcher over the previous six months from their performance at work. The senior staff member in the international sales department was more willing to train staff members in the same department. He said he now always included his subordinates in email conversations with customers. This, he said, was 'a direct effect of the IT projects'.

In the procurement department, staff members said that 'they had no problems at work'. They knew most of the processes in the procurement process and they also shared experiences with other staff members in the same department. The major problem observed by the researcher and confirmed by both the manager and the staff themselves, was wrong orders from suppliers. This could happen because of the mistake from the supplier side. Until the IT systems were put in place, rectification was by phones and a lot of checking of paperwork. After implementation of the first four projects, the problems could be solved quickly by email. Staff members in the procurement department told the researcher that they believed that there was a need for more training for further improvements. However, in the procurement department, the training for new members was undertaken through on-the-job training. They needed to do more, they said, because the IT systems allowed them to do more. Ms Nick also proposed that the information flows between the CCC Company and suppliers could be better synchronised after more training with the new IT systems.

Staff members in the domestic sales department said that they needed more training with the IT systems to enhance their ability to approach new customers and markets. However, connections with customers from senior managers were also important. The customers sometimes preferred to discuss or have a conversation with the senior managers rather than the new staff members. Mr Oh, Ms Ple, and Ms Fon help each other in the same domestic sales department. They agreed that they work efficiently as a team; they discuss problems and solutions with each other and believed that with further training they could do even more. They said that teamwork also gave CCC a competitive advantage for domestic sales and they needed to know more about the IT systems and how to use it to expand on what they already did.

Staff members in the domestic sales department said that synchronising information systems was crucial to mitigate problems with the inventory department and with the procurement department. Mitigation of the problem could be achieved with sufficient inventories before the sales departments could commit to agreements with customers. They believed that the IT systems could mitigate and minimise the delay problem. Consistent IT systems, they said, could be helpful for the organisation's sharing of information and much of the information could be used across departments. The researcher took these ideas to the senior managers with the proposition that implementing these ideas could help to minimise cost and save time for staff members.

Many problems arose in the company over the eight months of the first set of IT implementation. Some of the cases, the researcher and the senior managers believed, could be used as success case stories for new employees to study. All of the cases could be recorded or shared by staff members as knowledge sharing and could be use as mitigation strategies to minimise risks of stress that could arise at any time. Some problems at the CCC Company could cause stress in any department because delays would lead to financial penalties to the organisation. These problems were with the operational processes and could start from the inventory management system. In discussions, the senior managers and the researcher believed that a second cycle of IT with better policy, more training in the efficient use of the database system and better communications, could improve the business operations and management of inventory and production at the CCC Company.

In the financial department, it was found that the IT implementation was helpful and also assisted in the human resource department. The Financial department used to be with the

human resource department and just recently separated into the new department. However, these two departments still worked in cooperation with one another.

From the interviews and the observations at CCC between June 2009 and January 2010 regarding the IT projects in the first phase [projects one, four, five and sixteen], there was significant evidence that the projects were delivering what the company expected and that there was broad support across the company for the large investment projects put in place. After several meetings among management, staff members and with operational staff involved with the IT projects, it was agreed that there was no clear policy on the use of IT and that staff members performed their tasks mostly from what they were told to do. There was little ability to use skills to try new ways of working. One staff member noted that some supervisors used the IT as ‘just another way to do the same old thing’.

Image 5.4 shows the new IT environment at the CCC Company. Staff members enjoy using IT equipment and found that the new system facilitates their work. The occasion in Image 5.4 was in the period that the IT technician provided support to a staff member.

Image 5.4: The change in the work environment in using IT



During the first eight months of the IT projects in the first phase [June 2009 – January 2010], significant improvements in the way people worked were observed both by the researcher

and by the senior staff. The IT technician reported that the staff members had started to get used to the new systems as shown in Image 5.4. The staff members were a bit reluctant to save their own file in the data warehouse in the first month. However, their behaviour changed and this could be observed starting from October 2009. Several small IT training sessions were conducted by the IT managers to introduce different elements of the IT system to staff members. The IT manager also hired external staff to train the staff members to use new programs and how to utilise the data space in the data warehouse. Mr RJ also trained staff members about the security system, which was designed to make them more comfortable in storing their information in the data warehouse of the company. Eventually more and more staff members became comfortable putting their own information from their computer into the data warehouse. People also worked together more and helped each other e.g. as in Image 5.4. The researcher observed that the IT facilitated improvements work in the CCC Company. Staff were increasingly happy to use the IT systems. Supervisors and senior staff said that in their opinion staff members were working more efficiently.

In discussions about these observations with the CEO/owner and the senior managers, the researcher suggested that such improvements lead to more efficiency in business operations to the company in the long run. In summary, the researcher and the senior staff agreed that knowledge/information sharing in the organisation was organised and that the staff members were sharing knowledge by utilising the IT systems. One result of this was that management at all levels could spend more time on their own work responsibilities rather than spending time in teaching and guiding their subordinates like they had done in the past.

In a meeting in February 2010 with the researcher, the CEO and the senior managers, it was decided that the second phase of the IT projects would focus on support of what was already in place, rather than introducing more IT at this stage. The CEO wanted to see what had been put in place was 'bedded down' and made even more efficient. He reported he was beginning to get messages from suppliers and clients in their supply chain that communications was better, ordering was more accurate, and delivery of products was on a better schedule. It was too early to see if the investment in IT had had any effect on the financial performance of the company. There was a need to wait another six months to make any sort of assessment on that, he said.

Therefore at the end of this first cycle of IT implementation – intervention 1, the following decisions were made for Cycle 2:

Decision for cycle 3

- Assess the need for training and organise training for staff members.
- Learn about the need for policy to help staff members to work with IT equipment, and then develop appropriate IT policy for implementation.
- Develop training programs to assist staff members to know in-depth about the software and create techniques to operate computers more efficiently.
- Develop training descriptions to explain content so that staff members could join the right training session.
- Design appropriate training sessions for staff members.
- Minimise the perceived complexity in using computers.
- Minimise complexity in sharing information through the use of IT.
- Facilitate and coordinate IT technicians to understand the needs of employees to be able to approach them for support.

Since the organisation had always been small the CEO wanted to keep the work flow simple. During that time (2004) the number of employees was less than 70. However, in the year 2005, employee number increased, adding additional responsibilities to the Financial department, especially as money was a critical issue to the company. The CEO understood that cash flow could not be delayed, otherwise CCC could find itself in a difficult situation. Issues could arise from both suppliers and customers or clients. On the supply side, the component parts could encounter delivery delays which would immediately impact the assembling process. From the customer side, if the Financial department could not collect money owed by customers in time, then CCC would have a problem in their cash flow management. The CEO realised the work pressure on the Financial department and separated Human Resource duties to be under the responsibility of a new team. This aimed to help minimise complexity in the Financial department and for the company as a whole.

The next section summarises the second cycle, which led to a decision for future actions. The future actions were to implement training, implement IT policy, and implement official departmental meetings weekly basis, on every Monday. The meetings were designed to discuss on agenda raised by week and to disseminate company's important information.

5.3 Change management process

Information Technology could be solutions to assist and being implemented and deployed in the businesses. The business venture usually includes market research, usability studies, and testing into their business process to ensure their business process performance. However another important aspect, which often affects the sustainability of the business and the management of the change process directly as also discussed in this research. This research then presents some guidelines grounded in the social sciences that could foster the success of implementing information technology (IT) initiatives in the business, which includes software hardware and Internet and help improve the business performance. A case study is presented on the introduction of IT projects through three phases of Action Research. The objective of the research is to highlight the importance of the change management process and the role it plays in the deployment of implementation of IT projects and initiatives. The case study indicates that staff members inclined to use the new system if the proper change management mechanisms are in place.

This will involve the sharing information process and the process of working with other staff members to develop working systems and to make better use of these information technology projects. This research does not only focus on the use of hardware, software and Internet technology for managing information technology, it also acknowledges the major problems with implementing information systems which deliver value to the business. It explores reasons for these problems and management solutions to reduce these problems.

Managers regularly use experience and design their works in environments where it is difficult to position works that were appropriate with their subordinates. Their roles are regularly misunderstood and adjacent disciplines such as product management and development that in some cases are threatened by them. These were changes that need solutions in most organisations. However, culture of the company is one important factor that could lead to effective strategies to the business and that impact managing change in the organisation.

5.4 Summary

The strategy of the CEO was to solve inefficiencies in the company's supply chain both upstream to suppliers and downstream to clients, which he and his senior managers believed was caused by inefficient work processes in the company, poor communication with clients and suppliers, a lack of information organisation and information sharing and a reliance on old practices. He decided that change was necessary and began with a simple strategy to create change with various IT projects. Using the researcher as the catalyst, the strategy was implemented through practice. It was a big risk and a risk that was contested internally in the company by the more established staff. They were used to older and more traditional ways of working. IT represented a threat to them and they believed a threat to their jobs. However, the research shows that over time these sorts of challenges and contesting of the strategy dissipate and become accepted. The gap between what the policy wanted and what was achieved narrowed even over the short time span of six months. Staff began to include the strategy, and the IT, as part of their own practice, as part of their work. Any internal politics that existed before the projects related to having 'your own information' was beginning to change. The strategy IT was becoming practice for all staff.

In this Cycle 2, an intervention of four IT projects into the CCC Company, the researcher played an active role in decisions about the type and extent of the IT projects, played an active role in the establishing and installing of IT, worked with all staff at all levels in the use of the IT and converting their work practice to being IT based, interviewed staff across the company, had informal discussions with staff, undertook a minor evaluation of the effects of the projects [such as change parts and programs that were not effective](#) after three months and then a fuller evaluation at six months (Fig 5.8).

Each manager had observed the changes happening during the IT projects implementation and could see progress in the working performance of staff members as well as in the organisational performance overall. Even though there was only a short period involved from July 2009 to January 2010, improvements in individual performance and in organisational performance were observed and agreed upon by management and the researcher. The management team were satisfied with the overall progress and improvement in organisational performance. The management expected to improve the IT projects in phase two and ensure that phase one was fully completed. This was to ensure that the

organisation was ready to continue the IT projects in phase two and three with more sophisticated and complex IT systems building on the foundation of the first four projects.

The researcher and management agreed that to do this it was necessary to introduce more training in a systematic way and then support the IT processes and work in the company with clear policy. This would be intervention two in the research and is analysed in the next chapter. Figure 5.8 summarised action cycles 1 and 2 outcomes.

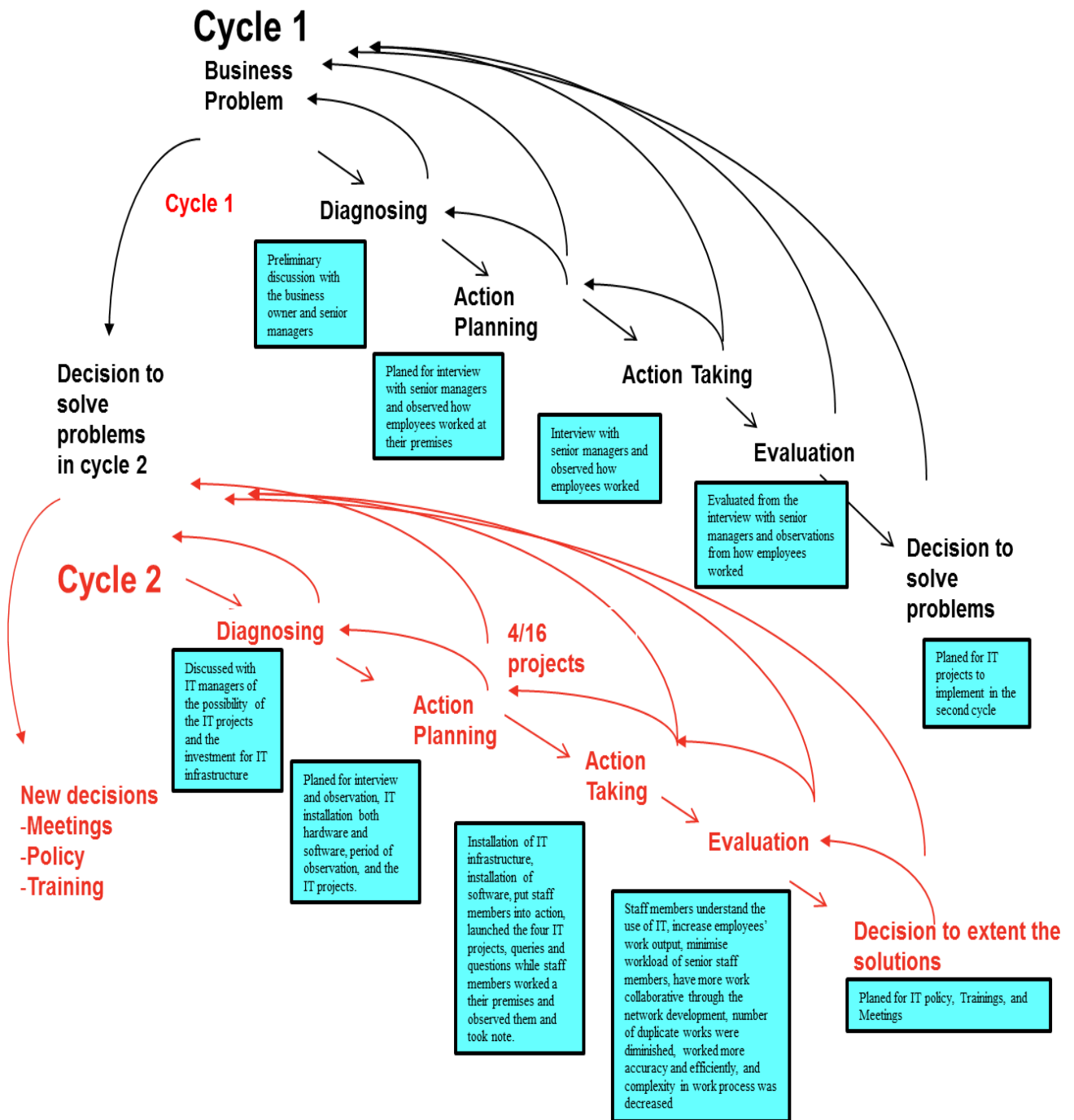


Figure 5-8: Action Cycles 1 and 2 Outcomes

To this stage in the research process, the strategy of IT as a support for work and as a means to improve relationships with supply chain suppliers and clients was becoming increasingly the focus of the actions of both staff, and senior managers during the 7-8 months of the IT interventions. There was some evidence that staff were increasingly both sharing information and using the IT software in their work practices. The strategy was becoming more embedded in their work practices and the practices used by staff were assisting the company to meet its strategy. Both the CEO and the senior staff had recognised the changes over this period of the research and were determined to not only re-inforce what was happening but to progress it. To the senior managers it appeared that the strategy they were implementing was becoming practice and the planning they had put in place with the researcher was enabling the strategy to have the effects on the performance of the company and its relationships with its supply chain they wanted. On that basis the decisions reached in this research cycle encourage the need for a second intervention and that is the focus in the next chapter.

Chapter 6

ACTION RESEARCH CYCLE 3 – THE SECOND INTERVENTION

6.1 Introduction

In cycle 2, the researcher, in collaboration with the senior managers at the CCC Company, identified the key problems that developed with the introduction of the four IT projects within the company, planned what needed to be done, and then worked with the senior managers and the CEO to make a set of decisions about what action to take in the next stage. The result of the second cycle was a set of decisions to implement more advanced training for staff in the company, to implement formal and regular meetings in the company to deal with IT issues, and to develop and implement an IT policy to enhance the projects that had been introduced and those that were planned to follow. This chapter tells the story of the implementation of training, regular formal meetings and an IT policy, and uses an Action Research format to describe, analyse and evaluate what happened between February and April 2010. The researcher again interviewed senior managers, staff in the company, and the CEO, and used observation and informal conversations with the staff. The understandings of the business improvements in the Fire Truck business as a result of the continued implementation of the four projects from intervention 1, supported and complemented by the new policy, more advanced training and additional, planned and formal meetings, was anticipated by the CEO to lead to decisions for future action improvements.

6.2 Third Cycle of Action Research

This cycle of Action Research utilised the same format of the first two cycles. The process began with the three decisions made from cycle 2 – meetings, policy and training (Fig 6.1). As a result of those decisions, the ensuing phases comprised a diagnosis of what was needed and plans of action to ensure the three decisions were implemented; the actual implementation through taking action, was followed by a more formal evaluation using interviews, building on informal discussions and observations throughout all of the cycle phases. At the end of this cycle, the researcher and the CEO agreed that this part of the research would end due to a time constraint on the researcher. However, the CEO was determined that the process of implementing the remaining twelve projects would continue in the company.

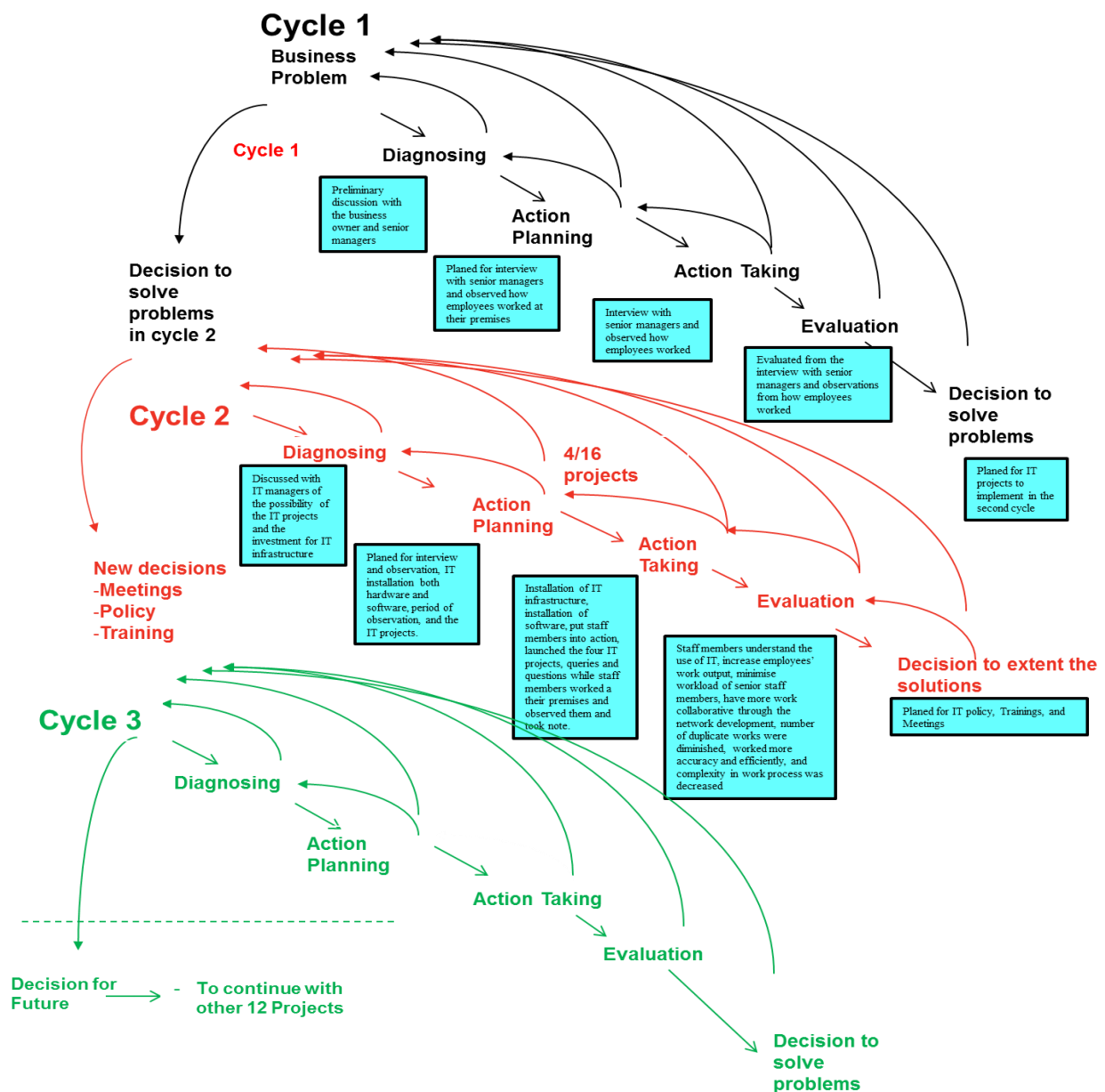


Figure 6-1: Action Research Cycle

The following sections describe the five phases of Action Research cycle 3 conducted in this research.

6.2.1 Phase 1 – Diagnosing

In phase 1 (the diagnosing phase), the researcher and senior managers discussed possible plans and solutions to implement the decisions made in Cycle 2. In Cycle 2 the researcher found that new staff members, especially the newer graduates, used computers well but, importantly, they also taught senior staff members and other staff colleagues after work hours. However, it was not consistent as some new staff members were willing to share their computer expertise, whilst some of them felt it was not their responsibility. In the strategy process, these staff were playing an important role in making the strategy become practice in the company. Mr RJ shared his view from his observation that:

...some staff members wait for their friends afterwork and share their knowledge and experience. I think this is good learning process. Staff members could learn faster from their friends rather than from people outside the organisation. They have more trust on their friends. They enjoyed sharing new information amongst them.

The researcher had also found in Cycle 2 that the initial training with the IT introduction alone was insufficient for many staff. Even though staff members learned how to use computers from short training sessions given by external trainers (after the computer installation process) or from their colleagues, they still felt they did not know enough to be able to use computers efficiently. They wanted to study other functions on the computers and in the software that could help them use the computers installed on their desks more efficiently. The researcher and senior managers discussed this and at the stage of this cycle finalised a solution to address the problem.

The researcher had found that the majority of staff members needed more computer training including Microsoft Word, Excel, and PowerPoint. This was because they said that they had little knowledge of computer programs and were 'not confident to do more'. Also, there was

an apparent discrepancy in the extent of use of the installed computer programs. It varied between some senior staff members who had experience in using computer systems, some who knew how to use computers 'lightly', and some who did not have any experience with computer systems at all. At the discussion, Mr ST commented that:

... I agree that short training sessions are important. I also observed that many staff members still have problems when they use computers. We need to help them before they get bored and do not use computers afterwards. I see some staff members use computers only a little. I think that making more training available would help them to have more confidence to use computers to undertake their work more and help it become more efficient.

Each senior staff member agreed. The researcher proposed that the CCC Company hire external trainers to present the training because they had more skill and experience to train the staff effectively. Also, another important reason was that staff members 'would be motivated and become more comfortable to ask questions'. This would enable them to train effectively and efficiently.

The decisions to begin the implementation of the three decisions from Cycle 2 were discussed and solutions sought:

- (1) It was agreed that more training was needed and that training would be provided by external consultants;
- (2) It was agreed that a policy on IT use would be developed and implemented across the company; and
- (3) It was agreed that the company would have more formal meetings to evaluate how the computers were working and enable staff to give the senior managers feedback about the effects of the implementation of IT.

The implementation of these actions then needed planning.

6.2.2 Phase 2 – Action planning

The researcher and senior managers concluded that the training sessions needed to be undertaken expediently. This was needed, they believed, to foster continued motivation of staff members to keep using and therefore gain more experience with the computers. If the

training sessions were delayed, the senior staff believed that staff members would not feel like participating or learning, and there would be no motivation for them. In the action planning process, the researcher planned, in collaboration as before with the senior managers, that the training sessions had to be implemented almost immediately in February 2010. Table 6.1 demonstrates the planned IT training sessions designed and implemented in February and March 2010.

The senior managers and the researcher also developed the IT use policy for the CCC Company and included training on that policy as part of the training sessions. From a researcher perspective this period of research was very intensive as the senior managers had determined that the matter was urgent. They had been impressed with the enthusiasm of the staff in the previous six months and stated clearly that ‘we have to keep it going and quickly’. They also wanted to quickly get IT policy in place. The IT training sessions and the IT use policy were developed in response to what the staff had indicated in interviews and informal discussions with the researcher as part of the evaluation in Cycle 2. The training was planned to be both timely and accurate.

Table 6-1: Activity planning in Intervention 2

Month	Activity Planning
February 2010 (1st/2nd week)	Implement short-training, IT policy, and meetings <ul style="list-style-type: none"> - Microsoft Word and Excel training - IT policy development
February 2010 (3rd/4th week)	Implement short-training, IT policy, and meetings <ul style="list-style-type: none"> - PowerPoint training - Meetings held on a regular basis - Implement the new IT use policy
March 2010 (5th/6th week)	- Interview senior managers and observe staff informally in their use of computers in their work in the company
March 2010 (7th/8th week)	- Interviewed senior managers and both interview and observe staff to evaluate the effects of the training, meetings and policy

April 2010**- Summarise and Conclude**

In the first week of February 2010, Microsoft Word and Excel training were organised for staff. Staff members attended training to gain more knowledge and to improve their computer skills. The training sessions were organised for after work, which was after 5.30 pm. This type of training in after-hours sessions is normal practice in Thai companies and was readily accepted by the staff. Mr RJ discussed that:

...the Microsoft Word and Excel should be the first training session because everyone needs to learn how to file documents in the same format. Microsoft Word and Excel are very basic programs in my view to train them. The trainings have to be implemented very soon.

In the third and fourth weeks of February 2010, PowerPoint training sessions were planned and organised to train staff to know how to develop attractive PowerPoint presentations. Tips and techniques were also planned to enhance the use of PowerPoint to make the company's product presentations more attractive to their customers. The skills involved in searching for information from the Internet was also designed to be taught in these two weeks. Mr ST and Mr TN agreed similarly that PowerPoint training should be after the Microsoft Word and Excel training. Mr ST commented that:

PowerPoint presentation will be very helpful for the sales team. Before they can do that, the Microsoft Word and Excel should be the first basic training for them first. They have to learn how to use and share documents interchangeably amongst all staff members in the same format to ensure the communication process and avoid future communication problem.

In March 2010 the researcher and the senior managers planned for the researcher to conduct interviews about the effects of the training sessions, about the impact of the IT use policy and the effects of the regular meetings that had been set in place. The researcher also planned to observe how staff were working with the IT after the training. The intent was not to measure any specific improvement but to get an assessment of the effects of the training, the policy

and the meetings from the staff. The CEO and senior managers agreed with the timeline proposed. In March and April 2010 the researcher planned to finalise the research interventions, evaluate the impact over the period of the research, work with the senior managers and the CEO to make decisions about the next stage of IT implementation following this period of research. The researcher intended then to evaluate the extent of the effects of the IT implementation, policy creation and use of meetings on the extent and effectiveness of information in the CCC Company. Mr ST suggests that:

Our training programs cover from beginning to advance levels because I understand that staff members are from variety of educational background and they have different level of computer knowledge and experience. Different staff members will be able to attend different level of training program at their appropriate level requirement.

Table 6.2 shows the training program and description of each training program provided to CCC staff members. Staff members were classified into different levels and the training sessions were arranged as trial classes and then decisions were made to continue in March – April 2010 and beyond. The initial training sessions in February 2010 were designed from an understanding of staff members' needs and their needs identified in their collaboration with the researcher during the Cycle 2.

Table 6-2: Training list and training program description

Training programs	Level	Description	Period
Microsoft Word	Level 1 (Basic Level)	This basic training focuses on basic document production. This training was designed to train the learner to know and understand how documents are created, formatted, and printed. This training program is a basic training for staff members who work in the area that requires them to produce reports, and create tables and use numbers.	February 2010
Microsoft Word	Level 2 (Intermediate Level)	This training of Microsoft Word level 2 extends knowledge to staff members from basic skills and helps them create more intricate and varied documents. Staff members would learn how to create a variety of documents using Microsoft Word; create and format invoices as well as other bills used in the CCC Company. Existing skills and knowledge of Microsoft Word are enhanced and staff members covered more advanced aspects such as formatting, tables, and lists, and new features such as merging, envelopes, sections, clip art and graphics are introduced. This training level was designed to add more skill to staff members to have more creativity to their work.	February 2010
Microsoft Word	Level 3 (Advanced Level)	This advanced Microsoft Word training was designed to provide staff members at the CCC Company with advanced skills and knowledge in using Microsoft Word.	March 2010

		<p>This training at the advanced level focused on producing longer documents as well as key aspects such as creating a table of contents, indexing, and creating cover pages. This advanced level of Microsoft Word training was designed for the sales department to enhance their computer knowledge to develop proposals and propose these to customers more effectively.</p>	
Microsoft Excel	Level 1 (Basic Level)	<p>This Microsoft Excel training basic level was designed to help staff members at the CCC Company to improve the way they work and present information, and train them to work on calculations and data manipulation. This Excel basic training provides staff members to develop their basic skills and knowledge that were necessary to create workbooks in Microsoft Excel. The Microsoft Excel training at the basic level covers creating a new workbook, adding data, editing data, formulas used in the spreadsheet, and printing and charting.</p>	February 2010
Microsoft Excel	Level 2 (Intermediate Level)	<p>The Level 2 Microsoft Excel training was designed to extend staff members' basic knowledge of Excel and provide staff members with skills and knowledge to produce more effective and productive workbooks. The training program covers formulas and function techniques, formatting, setting complex printing options, and using intricate charting features.</p>	March 2010

Microsoft Excel	Level 3 (Advance Level)	This Microsoft Excel training program (Level 3) focuses on advanced Excel features and advanced Excel analysis tools such as pivot tables, solver, outlining and summarizing. There were some key automation features such as macros were included in the training level.	March 2010
Microsoft Excel	For Financial Management	This Microsoft Excel training was designed to train the Financial Department about financial modeling with a need to use Excel in financial models and business analysis. This Microsoft Excel training (for the Financial Department at the CCC Company) includes the use of analytical techniques such as the internal rate of return (IRR) and net present value (NPV). Implementation and use of the IRR and NPV functions in Excel as well as lookup functions, and conditional sums were also focused.	March 2010
Power Point	Level 1 (Basic Level)	This Microsoft PowerPoint training program (Level 1) provides staff members at the CCC Company skills and knowledge sufficient to be able to create real-world presentations. Staff members (especially the sales team members) would learn how to add themes, run a slide show, print, and publish presentations.	February 2010
Power Point	Level 2 (Intermediate Level)	This Microsoft PowerPoint training program provide the skills and knowledge sufficient to be able to build and enhance powerful, real-world presentations for sales, budgets, clubs and more. In this course staff learn how to enhance text in a presentation, add media features, setup a	March 2010

slide show.

**Searching through
Internet**

Level 1
(Basic Level)

This training was designed to train staff members at the CCC Company to be able to search information through the Internet. The basic idea is to use Google and other search engines such as Wikipedia and Yahoo.

March/April 2010

These training sessions–were also designed to determine whether staff members at the CCC Company would participate or co-operate with the IT Department and to understand whether staff members needed assistance to enhance their IT skills. There had been little co-operation with the IT Department before the research started and their participation in the project was to foster better relations with staff and enable more effective use of the IT that was available.

These plans were set into action. Meetings were established. The IT use policy was developed and reviewed and finally implemented and the various IT training sessions began.

6.2.3 Phase 3 – Action taking

In this phase (action taking), the researcher followed the schedule presented in Table 6.1. In the first week of February 2010, the Microsoft Word and Excel training sessions were very well attended by CCC staff. They participated and were comfortable to ask questions when they did not understand the concepts and practices in the training. The researcher observed that ignorance of and the small amount of opposition to the initial introduction of IT seemed to have declined. The researcher found that staff members were both participative and cooperative. To assess how accurate this conclusion was, the researcher asked the senior managers for their assessment. They agreed.

In the following weeks of February 2010 and into March, PowerPoint training was held. The result was similar to that found in the first weeks of this new training, that staff members were both willing participants and were co-operative.

The result of this action taking in Cycle 3 ensured that the IT projects in Intervention 1 (reported in Chapter 5) [projects 1, 4, 5 and 16], which included network development in the main office; implementation of the Internet; and database development and implementation. During these weeks of training the researcher had informal discussions with staff trying to determine their perceptions of the effectiveness of the training. Staff members said that they ‘now better understood the purpose of the IT systems’ and that they ‘enjoyed saving their own files in the company database system’, as it meant they ‘didn’t have to duplicate their work’. However, it became obvious in the training that data management and duplication of files was an issue that would have to be addressed in the next stage of IT implementation in the company. The staff said they did not think they were using the capacity of the database and they did not think they used it efficiently. The researcher tested this with the senior managers and the staff supervisors. They agreed but wanted to make sure all of the basics were in place and well-practiced first.

Senior managers themselves had observed that one of the outcomes of the IT projects in the first nine months was that staff had changed their attitudes to work generally and were becoming less frustrated as they did not have to repeat work. Mr RJ commented that:

The employees' attitude towards the IT project was positive after the IT projects were implemented and staff members satisfied with the use of IT to facilitate their work. They found that IT was useful and could help facilitating their work more systematically and functionally. Consequently, the outcome from the usage of the IT could contribute to work efficiency and performance.

The software made it easier for staff to do things and save their own time, as they did not have to continually train staff every time they repeated an operation. They said they saw that staff were now more confident in their own work and were less willing to ask for help. For example, the senior managers observed that the capacity and space that they originally planned to make available for staff for their use in the first year in the data warehouse was almost fully occupied. The IT manager noted he had to expand the space capacity in the data warehouse to meet the needs of staff members to enable them to store their data for future reference. Even though it was found that many of the files and folders in the data warehouse were not relevant to the company's works and included games and personal information, there was a significant amount of company work and they said that the processes associated with the data warehouse were found to be both effective and efficient for staff work and for company operations. Both the researcher and the senior managers observed that staff members had changed their behaviour. They were much more willing to share information by using the data warehouse rather than by keeping information for their own use. They adopted IT as part of their work and trusted the IT to help facilitate their work to enable them, in their opinion, to become more efficient. Mr RJ discussed that:

I received report from employees that they satisfied with the IT systems implemented. They were confused at the beginning but problems were solved afterwards. Employees could plan their work more systematically and productively.

During the informal interviews and discussions held with staff across this period of the research, the staff agreed that their level of IT adoption and use had increased and that more staff members agreed that IT was helpful for their work. The researcher observed that they

started realising that they did not have to wait just to obtain information from senior staff members or managers. They could continue their work with no obstructions. Image 6.1 was taken during this period representing staff members in the company working with the new computers, computer systems, etc in ways they felt were both productive and integral to their work.

Image 6.1: Staff using IT for work flow



As the IT strategy unfolded across the company, there was a realisation by senior staff that it meant they too had to accept that their roles would change. They would not be in control of everything now. In a discussion with some senior staff members, they explained that they were only computer users. They knew only how to use computers and software, but they did not know how to develop programs or fix computers. The IT division would help to install programs used in the organisation or fix computers when they malfunctioned. The staff members had to send a request to the IT division and the IT division had a responsibility to organise their time to meet according to the request. In some cases, they needed specialists to guide them through how to use specific functions to be able to use software efficiently. In some respects the strategy becoming practice was changing roles in the company and lessening the 'power distance' between managers and staff as staff grew to accept that the IT strategy and the skill level being introduced enabled closer ties with senior staff.

After the new building construction and renovation was started, CCC had clear objectives on policy development and IT projects to guide staff members in the organisation to improve their business operations and overall performance. Senior managers made it explicitly clear to the researcher that IT, information sharing, and company policy could motivate staff members to share their information with colleagues. The IT projects were having a clear impact. Each

staff member had stored their information in the data warehouse, and as reported by the IT division, the space in the database had reached 55% of its capacity in the first two months. The usage rate increased from the first month by 15% of its capacity. It was reported in the third month that the storage of information reached almost 55% of the two terabyte capacity of the data warehouse of the company in the first year.

Table 6-3: Capacity utilisation of the data warehouse at the CCC Company

Data Space Utilisation	July 09	August 09	September 09	October 09
Utilised	15%	35%	55%	75%
Available space	85%	65%	45%	25%
Total	100%	100%	100%	100%

Table 6.3 demonstrates capacity usage of the data warehouse that staff members utilised was up to 75% of all space within the period of July to October 2009, based on the records in the data warehouse at the CCC Company. Mr TN commented that:

I only dropped information into our database at the beginning to see how the system works. Other staff members start looking into our database systems before they approach me. Otherwise they put in a request for information and I will always support them.

The strategy was, it can be argued, becoming embedded in the work practices of the company. The IT department had to plan and consider for future usage whether they should increase the capacity of the data warehouse for the upcoming months or for the following year. The IT department investigated the capacity usage and set out to minimise the duplication of files and information. It was apparent from the interviews that this IT usage was inefficiently used at the beginning and the time spent for repeating discussions or disseminating information was still unchanged. Staff members were encouraged to search for and study information from their own sources before they approached senior staff members for information.

The researcher played a key role in these changes. He discussed IT issues and implementation and worked with staff members in informal settings and in meetings and encouraged them to build up their own knowledge from the IT system of the company. The senior managers were convinced of the need to share the information in the organisation's data warehouse and they

found IT was useful and decreased their workload in sharing and finding individual information for other staff members. In many cases previously, a staff member came to see them many times with the same queries. This behaviour indicated that staff members would not do anything to learn information themselves but only asked senior staff members or senior managers for information they needed. IT helped staff members to learn where to get information from anywhere and anyhow, as the knowledge base system was available across the organisation. It was now embedded in what they did and their reliance on senior staff dissipated. Mr ST further explained that:

IT projects really help change our employees' behaviour in positive direction. Employees learn to share information amongst them as well as learn to share knowledge and experience how to use computer and software. In the past, they only kept their own information and never shared their information to other colleagues if not really necessary.

As part of the process of implementing IT projects, training, policy and meetings, the senior managers were determined that the systems remained stable. So maintenance was considered essential both to maintain impetus, but also to give staff confidence that what they were doing would be both secure and 'still be there in the morning'. This formed a central part of the new IT use policy for the CCC Company. Image 6.2 shows the IT technician performing maintenance services on the main servers. This process was used to also demonstrate to the staff that CCC had support systems in place to ensure an unbroken flow of communication. The maintenance service provided to staff members at the company was the responsibility of the IT Manager.

Image 6.2: The IT support system



One of the actions taken as part of the IT implementation and re-enforced in this second phase of implementation, was the need to both plan and continue maintenance. As part of that the senior managers, the IT Manager and the researcher worked together to develop a maintenance plan. Figure 6.2 shows the IT maintenance process that took place at the CCC Company. The process was implemented in a loop starting from the IT Manager that developed the plan and perform an analysis for IT management. This maintenance process was further indication of what happens when strategy becomes practice in an organisation. The focus was not on any document or statement other than IT was being used to improve operations in the company and by doing that improving the relationships between the company and its upstream customers and downstream clients. Each of the actions taken in both interventions described in Chapter 5 and in this chapter essentially shows that strategy become practice through action. As practice occurred, the strategy became the practice itself and its acceptance become part of that practice (Fig 6.2).

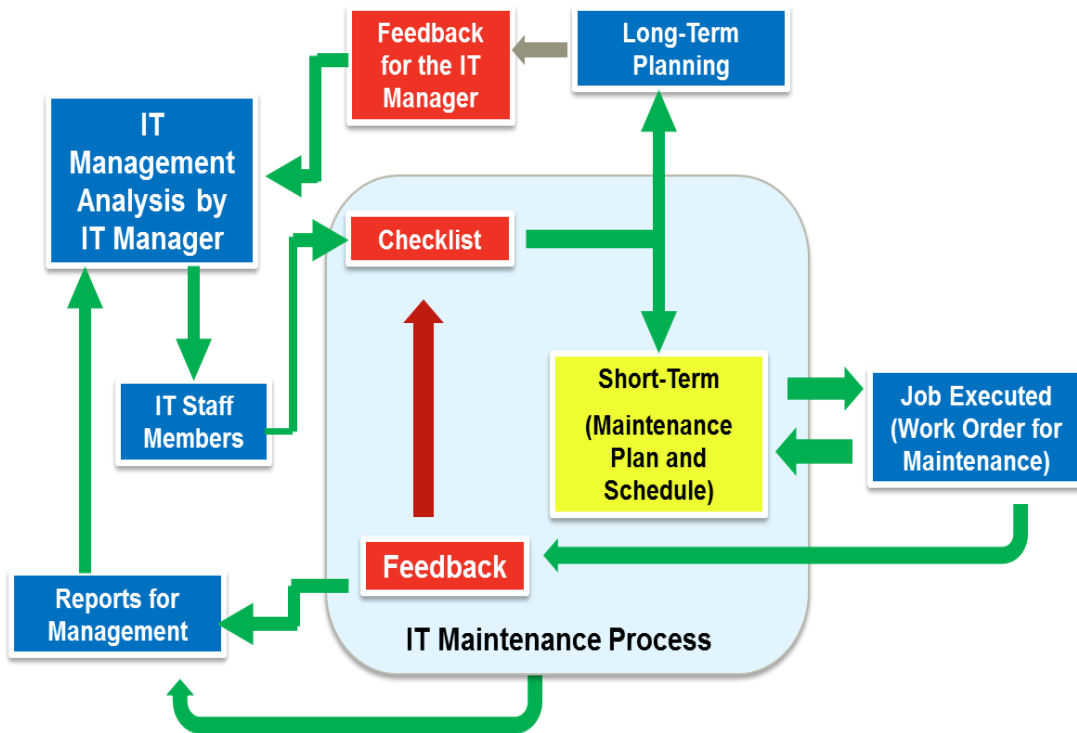


Figure 6-2: IT Maintenance Process in CCC Company

In Figure 6.2, the large square block indicates the processes that were taking place within the IT maintenance management process by the IT technician. The IT manager would conduct analysis to identify maintenance tasks for the IT technician to care for IT equipment. The analysis resulted in a list of tasks for the IT technician, which formed the content of a checklist. The technician would then follow their work schedule as planned from the maintenance checklist to ensure IT systems in the company were continuously in working condition. Decisions also had to be made about whether queries requested by other staff members within the organisation required urgent attention or were better seen as part of a longer term planning process. If queries were to be in terms of long term planning processes, then the queries would be processed through the IT manager and the management level. However, if queries needed an urgent response from the IT technician, then the IT technician would just do it. Then the IT technical staff provided feedback to the IT manager. This was considered as a short-term maintenance plan as the IT staff performed their work from checklists and other ad-hoc requests. Mr RJ confirmed this process that was undertaken as a short-term maintenance plan that:

Some technical inquiries could be processed by the IT technician if they are in urgent matters. However, if they involve with budgets then management level has to get involved.

IT planning was considered so important to the success of the IT project strategy in the CCC Company that it was brought up to management level meetings and added into the organisational policy for the long-term benefit of the company. IT planning had to be implemented at the same period during the construction and renovation of the company [2008 – 2010]. IT planning was seen as integral to the strategy and needed to be inclusive of all staff. This was because the IT projects in phase one [projects 1, 4, 5 and 16], and the second set of interventions of policy, training and meetings that were introduced during this Action Research, were aimed to develop an organisational culture for staff members to familiarise themselves with the IT and computer devices, to create IT environments of use for staff members, and to promote IT effectiveness in the organisation.

The researcher observed that, at the management level, there was a demand that any action taken increased the level of organisational performance. Senior managers discussed that they wanted to ensure that the policy development and the implementation of the IT projects, a policy, and further training and formal meetings would assist the company to be able to achieve its organisational objectives at higher levels of performance. In the evaluation of the implementation of the first four IT projects the IT manager noted that each staff member used IT infrastructure initially to serve their own purpose and there were no specific policies for practice and the computers were used independently, even as part of a network. He further noted that over the six months of the first implementation this changed for most staff, but what they could and could not do was uncertain. Therefore he recommended to management their need for the IT use policy. Mr RJ discussed that:

Policy will be helpful as it can be used as a guideline for the company. Policy can also help to shape employees to follow in the same direction.

This action became a key element of this second round of IT interventions in the company. The researcher had observed that each computer in CCC was used and stored information in different styles and each staff member developed their own information initially only for single use. However, sometimes they repeated information individually and sometimes this was similar to what other staff members had been, or were doing. This was considered to be double working by both senior managers and the IT manager and therefore was time consuming. There was no aim and direction to what staff did with their computers or the software available previously. After the IT policy was implemented, some training happened in this intervention and corresponding meetings were set up, each staff member could

increasingly see the benefits of using the IT and using computers to develop and share information with other staff members more efficiently. The action of putting a policy in place and having meetings to discuss what happened was crucial to achieving the strategy of adopting IT to improve company performance.

Image 6.3 shows the meeting for action planning in training developments in Cycle 3. At the same time, also resulting from Cycle 2, the company needed an IT use policy to be first developed, then implemented. The researcher found that CCC already had an IT policy but staff members did not feel that the IT policy was tangible. The researcher proposed that CCC should introduce a new IT policy in a written format so that staff members perceived that IT policy existed in the organisation and was integral to their work. Research by Thanasankit (2002) showed that Thai workers liked certainty and policy offered certainty in the workplace.

Image 6.3: Meeting for action planning



With appropriate progress and improvement of organisational performance in Cycles 1 and 2, the management were satisfied with the progress of policy development and implementation of the IT projects. The progress of the policy development and implementation of IT projects can be measured from the capacity usage of the data warehouse, the information sharing behaviour within the organisation, and greater time availability of senior managers for other important duties such as organisational planning.

The results from IT projects in phase one had been found to be effective. Staff members were able to use IT for information sharing, which worked effectively within the organisation. Senior managers said that planning for IT infrastructures during the initial stage (IT projects in Cycle 2) could help the organisation reduce cost in the long run and lead staff members to be well acquainted with the IT system. A greater improvement in IT utilisation was expected at later stages.

The action taken regarding policy development and implementation of IT training projects in cycle two was expected to further enhance knowledge sharing and information sharing in the organisation, which the senior managers hoped would result in business improvement. Information sharing supported the organisation's ability to create competitive advantage through their business capabilities. As part of this realisation of the impact of the strategy being put into practice in the company, the senior managers also saw the need for more formal meetings as part of the analysis of the outcomes at the end of the previous intervention of the four IT projects. Senior managers admitted that they perceived that meetings were not crucial in the past and therefore meetings were not officially arranged in the organisation. Mr ST commented that:

Meetings were unofficially organised in the past. Each department only talked and discussed when needed. Supervisors only came to their subordinates directly and discussed at the table.

According to the meetings that were previously mentioned, the researcher found that the company could use the meeting as a tool to disseminate information to staff members; an official meeting would be helpful and more efficient than unofficial meetings; and an official meeting was found to be efficient because staff members realised that they could ask questions and they could get the right answers rather than 'not sure' from other staff members. That was discovered during the training sessions. In the training, personal training at work stations was efficient but took a long time to deliver to each staff member. At the official meetings, everyone knew that there were rules and regulations to follow. They were able to get official information from the meetings. Information that staff members received from official meetings helped them to work more productively. Image 6.4 shows one of meetings that discussed the result of using IT to facilitate work at the CCC Company. The researcher (standing) played an active role in the implementation of the meetings and their role to improve IT adoption and use in the company.

Image 6.4: Discussion at a small formal meeting on the results of using IT with a senior manager



In the action taking phase of the second intervention in this research, the researcher in collaboration with the senior managers in the company, and with the permission of the CEO, undertook three actions:

- Introduced more training on IT;
- Developed and implemented a policy on IT use; and
- Established a program of more formal meetings to evaluate how the computers were working and to enable staff to give the senior managers feedback about the effects of the IT implementation.

6.2.4 Phase 4 – Evaluating

The researcher's overall assessment of the second IT set of interventions, coupled with the accruing effects of the first intervention was that an integration improvement of information sharing led to an integration capability as the overall operational process of the CCC Company improved. Improvement in information sharing led staff members to better know and understand products and the organisation and, as a result, customer service was improved. For example, there was no homogeneous corporate PowerPoint presentation in the past and different sales team members used different presentations. Some only used brochures to

present products. After the introduction of IT at the company, staff members became 'enlightened' and used computers for multiple purposes. One purpose was that staff members used computers to develop improved product presentations for customers. Customers had therefore more confidence with the CCC sales team members and they valued that the sales team was more professional in the Fire Truck industry. Customers were satisfied with the PowerPoint presentation when presented with information from the sales team members. Mr ST and Mr TN mentioned that they received feedback from major customers that the new presentations impressed them. Mr TN confirmed his perception of the introduction of IT into CCC, and said:

Our customers like the new style of our presentations. They said it looked more professional. The presentations that we used to have was alright but the customers were happy with the new presentation versions. The presentations were unique and every sales team member used the same pattern and style. They were more confident when speaking in front of customers.

The interviews with all staff and managers and with clients of the company showed that in using computer systems, most work in each unit was made more efficient and that overall cost reduction could be achieved. Therefore, the improvement of information sharing led to better integration capability, and the desire for quality performance in the organisation appeared to be being achieved. Mr TN said:

The overall cost was reduced. We had to send information back and forth many times previously just to clarify a specific type of our auto part. After the introduction of IT, we can see that the communication process was a lot better and improved our staff members' communication capability with external parties. I am quite satisfied with the computer systems. It's accurate and can respond to our customers and suppliers timely.

The CCC Company organised several meetings to finalise and assess the impacts of IT introduction on their working environments. Image 6.5 shows a meeting to discuss how IT impacted on their work. The meeting was part of the formal systems introduced in the second implementation stage. In this meeting, there were people from all departments in the company. The role of the researcher was to conduct the evaluation of all that had been implemented and to see if they needed any other support to help them to work more efficiently by using IT. This meeting was with major departments including the International Sales Department, Domestic Sales Department, the Financial Department, and the Human Resources Management Department.

Image 6.5: A meeting to discuss the results of the introduction of the IT in the CCC Company



(The researcher is second from the right)

The basic needs of staff that emerged from the meeting was for even more IT training for improvement in understanding some common functions of Microsoft Word, Excel, and PowerPoint so that staff members could enhance their work performance. The meeting was considered by both senior managers and by the staff to be an important tool to drive IT projects to succeed because employees would raise issues that they had in personal queries at the meeting. The researcher observed that official meetings were helpful and they could use them to get official information to all staff members. The senior managers said that this was clearly a way of improving communication in the company and probably affected the way staff felt about the company. Informal discussions with staff showed that all of the interventions together, including the meetings did have a positive effect. Mr ST commented that:

I think official meetings were a lot better. People listen and share idea much better. I receive many good ideas and I think that they are a lot more effective.

The senior managers noted that they felt that information sharing improvement helped the CCC Company to monitor internal processes better and improved external operations. The CCC Company could, they agreed, align internal processes and external operations better with the strategy of the organisation. The CCC Company then could assess the operational processes and evaluate the operational performance of its organisation by checking with the employees and then monitor changes from the outcomes that employees had performed in

2010 and 2011 compared with the end of 2009. The ability to moderate the operational performance demonstrated that the company had measurement capabilities and it could improve accuracy in its business operations along the supply chain.

The senior managers noted that the information sharing improvement also increased the information exchange capability of the staff inside the company and with supply chain partners, both suppliers and clients. Each stakeholder along the supply chain of CCC required accurate and reliable information to minimise unexpected problems in the order and delivery system. Senior managers reported a perceived improvement in information sharing, based on commendations from suppliers and customers that the information they received from CCC was more accurate. Senior managers also explained that preliminary data in the company showed overall results of using IT had eliminated costs and increased sales (no formal confirmation of this can be substantiated, as the information is commercial-in-confidence. The researcher was able to observe the data and confirm that there was no overstatement of the effects). In exchanging information along the supply chain, the CCC Company developed and standardised data to ensure the accuracy and reliability of information. The benefit obtained from accuracy and reliability of information would benefit future usage. Each staff member could acquire, store, edit, analyse, and distribute to stakeholders involved within the CCC Company and along its supply chain. Mr RJ discussed that:

Staff members are more participative. They also exchange more information and help each other with work more effectively.

Senior managers believed policy and implementation of IT projects had enhanced knowledge sharing and the working capabilities of staff members. Each staff member enjoyed using information and had information sharing to support their work. Staff said IT systems provided better products and services to the customers. Activities for information sharing in the organisation resulted in clear policy development and in implementation of an IT project plan for future implementation. The management level were satisfied with the changes of phase one of the IT projects, as well as the improvements and outcomes of phase two and they anticipated increased positive effects from the twelve remaining projects when they were implemented in phase three of the IT projects in the future. The senior managers fully understood that the phase one IT projects, the policy and training would build up IT infrastructure and create basic IT requirements for the organisation. Advanced processes could be expected and achieved in the four IT projects. The full implementation of all 16 IT projects would enhance organisational quality performance for CCC's business operations,

which could result in higher efficiency and the reduction of overall costs along the supply chain. The intended 'bottom line' was to improve profits.

The improvement in information sharing was considered to have such an effect that this would lead to increased logistics capabilities for the company, which could help the organisation to achieve cost reductions and differentiate their products and services from their competitors. The CEO believed that the ability to create competitive advantage through logistics capabilities of the company could sustain their competitive position and lead to more efficient business operations. He was impressed with the changes that had happened as a result of the IT projects. The CEO commented that:

I am quite satisfied with the result of changes. I am confident the effects would lead to achievement of my expectations and would return value for my investment in improvement and extended IT in my company.

(The CEO on 2 March 2010, 3.15 pm, at the CCC Company)

The CEO perceived that to gain and maintain access to the organisation, good social skills and a willingness to perform in the organisation was to open one's heart and mind. The researcher worked to improve the social skills of staff whilst working with participants at the company and gained trust from them. In addition, the researcher provided participants feedback when asked, being an interpretive researcher.

After several meetings and discussion with senior managers during the business expansion period between 2009 and 2010, in this cycle three, the researcher and the IT manager implemented the training and policy. Actions during this evaluating phase were as follows:

Cycle 3 Implementation of IT user Policy, Meetings, and Trainings

Action

Training

- Implement training sessions for staff members such as the use of Microsoft Word, techniques in using Microsoft Excel, techniques in using PowerPoint presentations, presentation excellence to impress customers, and the use of the Internet to search information online. Software training was divided into small trainings but with different themes. This was dependent on the knowledge and skills of staff members, and their interest on the topics. The training was designed to meet the needs of the staff and meet the requirements and intent of the IT strategy devised some twelve months earlier in the process.

In this phase, required training sessions were identified and staff members at the company got involved. They were eager to learn as they realised now the importance of using IT. They noted in numerous conversations that they never thought that IT could help them until they started using IT. When the company first introduced IT into the organisation, many staff members opposed its use. They thought that IT was complicated and wasted their time. They also believed that IT would replace their work and that finally they would lose their jobs.

As a deliberate intervention, the researcher took time to convince staff members to understand that the company did not aim to replace their jobs with IT. On the contrary, the company would like to facilitate their work and to help them to work more efficiently. Staff members did not believe that at the beginning and the researcher struggled to change their beliefs. However, one month after introducing IT, the researcher could observe the change and this continued through both stages of implementation. Staff members started talking to each other. They stayed back late after work as they realised that traffic in Bangkok was congested and they would have a long wait outside until they could reach home. They preferred to stay in the office longer to get used to the computer programs in the evening after working hours. Mr ST discussed that:

I was quite surprised that some staff members they eager to learn after work. That might because of the traffic problem in Bangkok force them to stay. However, they help each other to use the new software after work. This is what I saw them. I was really impressed.

Staff members started talking to each other both within their own department and from one department to another department and exchanged computer and business knowledge. Each staff member got to learn some functions on their own and they traded their computer knowledge with each other. The researcher let this situation continue and approached them sometimes to offer small training tips at their workstations after work hours. The researcher found that the need for training was increasing throughout both cycles of intervention and it was what the researcher expected would happen. Staff members started sending more queries to the IT department as well as through the researcher for training. The researcher started gathering information afterwards and studied the needs and attitudes of staff members towards the IT. The action taken in the second round of interventions with IT with further training in Microsoft Word and Excel, techniques in using PowerPoint presentations, presentation excellence to impress customers, and use of the Internet to search information

online was insufficient. The staff became more willing to try and use more techniques to make their work more efficient. At the end of the second intervention it was obvious from the statements of the staff that they still wanted more training. They wanted more database training. They wanted more training on information searching and wanted to know how to use file sharing more effectively. Mr RJ discussed that:

I was also reported that many staff members wanted to learn how to share files and folders more effectively. I would organise that later time when appropriate.

However, training was only one of three actions taken in the second intervention. The senior managers and researcher had decided that more regular meetings of staff were needed to not only talk about the intent of the IT policy but also to discuss what was happening with the implementation. The following text box describes what happened in the action phase regarding meetings.

Cycle 3 Implementation of IT user Policy, Meetings, and Trainings

Action (Continued)

Meetings

- Organise and promote official meetings rather than unofficial meetings. From observations, the researcher found that information disseminated and circulated at the official meetings was more accurate and efficient than in unofficial meetings. Staff members treated information as more important during official meetings than in unofficial meetings.
- At unofficial meetings, staff members only had conversations and did not pay much attention in the content of the meeting. They sometimes forgot information detail. Some information had to be treated as important because they could have an impact on the business. Previously, in many cases, some staff members forgot information discussed at unofficial meetings. That caused a delay of products to be delivered to customers. The company had to pay a lot of money for a fine caused by the delay of product delivery.

The researcher planned, in collaboration with senior managers, that 'meetings' could be used as a tool to get staff members in the organisation together. Meetings could be used to disseminate and circulate information. From the trial period, during the training in February and March 2010, 'official meetings' were made to call for staff members to meet and

disseminate information. The information received in official meetings was considered by both senior managers and the staff themselves to be more efficient than in the unofficial meetings that happened previously.

The action taken in this second intervention was that there must be 'official meetings' rather than unofficial meetings. Mr TN agreed and said:

I reckon that when we had meetings, we regularly had unofficial meetings. These were not right. We regularly called for urgent meetings and they were not effective. The staff under my responsibility regularly forgot meeting times. They forgot the content in the meeting. I found that they regularly forgot information the next time I asked them to come for the meeting.

Mr RJ agreed that business concerns had to be discussed in the 'official meeting'. There were many incidents where the business had lost money, for example, by the company having to pay a fee as a result of a delay in product delivery. That happened because there was miscommunication through unofficial meetings. The training sessions and the research during the first six months of this research had shown that the organisational culture needed change. The 'official meetings', the senior managers believed, would lead to higher performance of the business and lead the communication process to becoming more effective.

The effect of the formal meetings based on interviews and discussions with both senior staff and with the company staff were:

- 1) Improved communication about the intentions of the company;
- 2) Better exchanges between staff members in and across the departments;
- 3) Better communication of further needs of staff in wanting to use more IT to improve their work performance; and
- 4) Improved confidence that the company was working with them to assist them in their work rather than trying to replace them with machines.

The third action taken in this second intervention in the company was to address the identified need for an IT use policy. This action is described in the following:

Cycle 3 Implementation of IT user Policy, Meetings, and Trainings

Action (continued)

IT Policy

- Implement IT policy to assist staff members' works. Policy could be used as a guide for staff members to follow and to perform.
- The policy includes instructions on how to use computer such as:
 - a) Any computer problems must be reported to the IT technician immediately
 - b) Turn on the Uninterruptible Power Supply (UPS) before turning on your computer
 - c) Do not save games or personal information on the servers
 - d) Personal information must be saved in your personal handydrive or in your individual home drive (D:\)

...

The IT policy was developed to guide staff members with clearly written instructions and was sent to all departments to follow. IT policy was made as common to use in every department. This policy (in Thai) is shown below:

การใช้งานเครื่องคอมพิวเตอร์

1. เครื่องคอมพิวเตอร์ จะต้องอยู่ในสถานะที่ทำการต่อผ่านเครื่อง UPS เสมอ เพื่อป้องกันเครื่องขณะไฟตกหรือไฟดับ
2. ก่อนเปิดเครื่องคอมพิวเตอร์ ควรตรวจสอบก่อนว่าเครื่อง UPS อยู่ในสถานะเปิดอยู่
3. ให้รักษาเครื่องคอมพิวเตอร์ เสมือนหนึ่งเป็นสมบัติส่วนตัว เพื่อรักษาประสิทธิภาพในการทำงาน
4. หากพบข้อบกพร่องเกี่ยวกับการทำงานของเครื่องคอมพิวเตอร์ในขณะที่ปฏิบัติงานให้รีบแจ้งเจ้าหน้าที่คอมพิวเตอร์ทันที เพื่อทำการแก้ไขและดูแล ให้เครื่องคอมพิวเตอร์สามารถทำงานได้อย่างเป็นปกติ
5. ห้ามดาวน์โหลดหรือลงโปรแกรมอื่นก่อนได้รับอนุญาต
6. ปิดเครื่อง ทุกครั้งหลังเลิกงาน
7. หากไม่ใช้เครื่องติดต่อกันนานเกิน 30 นาที ให้ Stand by ไว้
8. ห้ามเล่นเกมสักระยะทำงาน
9. งดการใช้ข้อความ ภาพ เสียง วิดีโอใดๆ ที่ไม่สุภาพ คำหยาบ ส่อเสียด กล่าวร้าย ดูหมิ่น พาดพิงทำให้ผู้อื่นเสียหาย และทำให้เกิดความแตกแยกทางสังคม และกระทบต่อ สถาบัน ชาติ ศาสนา และพระมหากษัตริย์
10. งดโพสต์ข้อความใดๆ ที่เป็นการวิจารณ์เกี่ยวกับการเมือง เนื่องจากข้อความต่างๆจะเผยแพร่ต่อสาธารณชน

This is an example of the IT policy distributed and circulated in the organisation. Staff members signed the document to acknowledge the IT policy that was developed and used in the CCC Company. The following text box is the translation of that policy into English:

How to operate computers:

1. Computers must be connected to the UPS at all times, to avoid unstable electrical situations or blackout problems.
2. You must ensure that the UPS is 'on' before you turn on the computer.
3. You must treat the computer as if it were your own personal computer
4. You must report to the technician when you find that the computer is not in a working condition
5. Do not download files, games, or programs onto the computer without permission
6. Turn off the computer after work.
7. If you intend to not use computer for 30 minutes, leave your computer on 'stand by' status
8. Do not play games during work hours
9. Do not use messages, images, sounds, or video that are considered to be impolite in public, that may harm other people, or may lead to public disharmony or have an impact on nations, religions, and the institution of the King.
10. Do not post any political messages onto the public website.

The policy was more than just operational across the company. There was also policy developed to assist staff to get more uniformity in their work and make sure there was consistency across the company. The following text box is another policy example being used at the CCC Company. This policy aims to enable staff members to follow and perform in the same direction. This policy was about files to be saved in the company's server and for information sharing purposes. The company started to convince the International Trade department to start converting files from brochures into 'pdf' files so that other staff members could share information when they needed. For example, the sales department might want images of products or descriptions of supplies to introduce to customers. They could now retrieve information and arrange it in their own presentations and introduce it to customers in a more rapid manner.

The following box is the policy (in Thai) to convert files for the International Trade department to start and follow.

การแปลงไฟล์

1. หากได้รับโบรชัวร์ ชิ้นส่วนยนต์ หรืออุปกรณ์ต่าง ๆ จากต่างประเทศ ให้แสกนเนื้อหาโดยใช้แสกนเนอร์ เพื่อเป็นไฟล์ pdf และเก็บรักษาไว้ใน server ส่วนกลางของบริษัท ที่แยกหน้าต่างงานไว้ชัดเจนแล้ว
2. เอกสารสำคัญบริษัท เมื่อดำเนินการสำเร็จแล้ว ให้เก็บไฟล์ไว้ในรูปแบบไฟล์ pdf เพื่อประหยัดเนื้อที่ในการเก็บไฟล์งาน โดยเรียงวันที่ เดือน ปี ของเอกสารงาน และบ่งบอกให้ชัดเจนว่าเป็นเอกสารใด
3. รหัสการออกเอกสาร ให้ตรวจสอบจาก ต้นสังกัดหน่วยงานนั้น ๆ เนื่องจากได้รับการตกลง และยอมรับรหัสใช้งานกันอย่างเป็นทางการแล้ว
4. การบันทึกเอกสาร จะต้องทำให้เสร็จลุล่วงวันต่อวัน เพื่อให้เอกสารผ่านกระบวนการ และไม่เกิดการสับสนในการติดตามเอกสารในภายหลัง

The following box is the translation of File Converting Policy into English:

File Converting Policy

1. When receiving new brochures such as auto supply brochures or auto-parts from abroad, you must scan the new brochure by the computer scanner and keep the file in 'pdf' format as well as save it on the main server. Major folders were already generated in the main server so that each staff member can identify or locate the folder to save easier.
2. All important documents must be saved in the 'pdf' format. This is to ease the process to save the files and easily identify and locate the file afterward. The files should be saved by date then identification of the file.
3. File code and number must be verified by each department as the codes were previously and officially assigned
4. Files must be saved on a daily basis to avoid any future confusion that could arise unexpectedly.

This File Converting Policy was useful and other departments were able to use the same information for their own purposes, for example, the Financial department could use this information to quote the price for customers; the Design department could use this information to create new Fire Truck designs for customers; and the Human Resources

department could develop future planning on the number of employees to be recruited in the subsequent financial year.

The researcher and the IT manager analysed what folders had to be created in the main server and implemented them. The researcher also added new files when staff indicated they were needed. Employees could access the folders and share the files from each folder. Figure 6.3 presents an example of folders that were generated in the main server of the CCC Company.

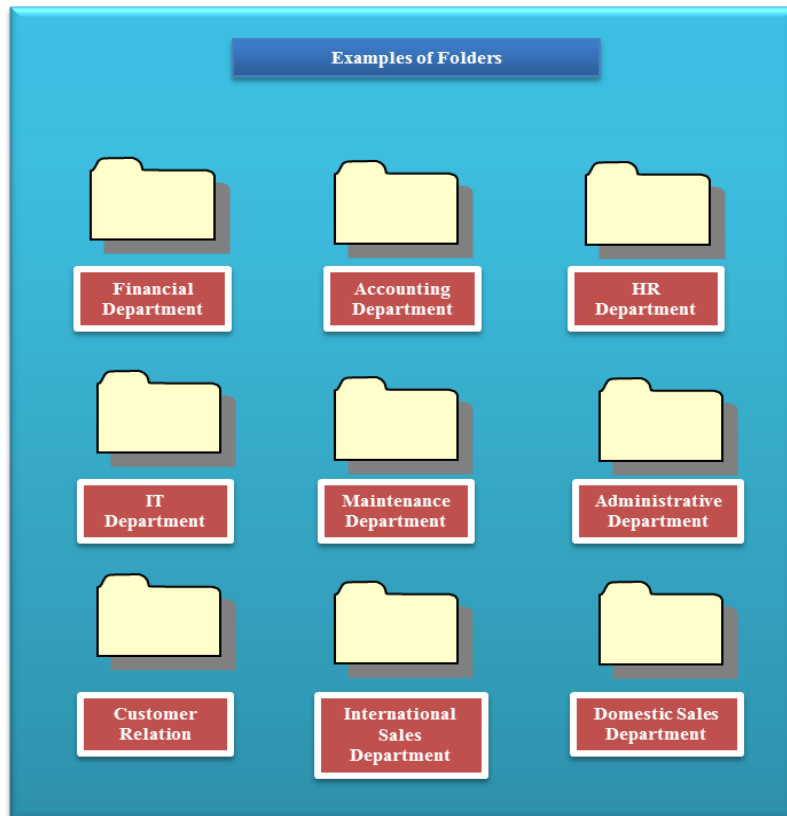


Figure 6-3: Files in the company's server

The folders were separated into different departments. Each department also had several sub-folders in their department's folder as shown in Figure 6.4. Smaller folders were generated according to the needs of each department and according to importance of information to share. Some information could be shared with other departments, whilst some information had to be kept confidential only for that department or only for senior managers to access. This authorisation level was also discussed in the management level. Figure 6.4 demonstrates examples of several folders that were generated in each department.

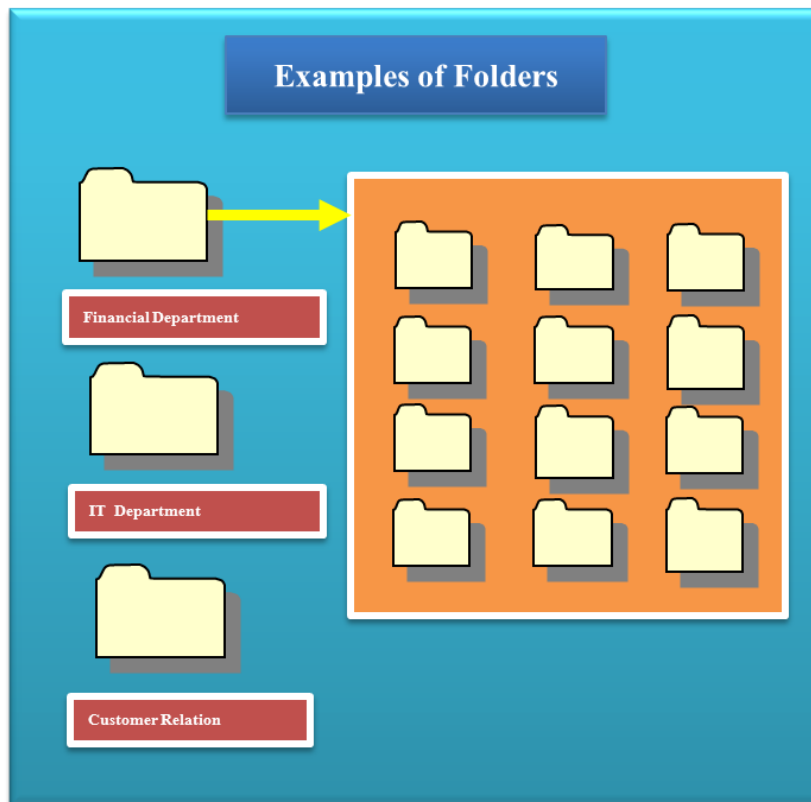


Figure 6-4: Examples of folders developed for each department

An issue regarding authorisation to access information arose. Senior managers were afraid that staff members would have equal access to the information. The researcher and the IT manager discussed that levels of authorisation that would be generated and used with the company as some sets of data were confidential and some were ‘commercial-in-confidence’ and needed to be protected from information theft. Senior managers would be granted full access and they could also generate various levels of authorisation to other staff members to access each folder in each department, if and when required. However, each department would have some folders that would be available to every staff member to access.

To avoid any conflict, the levels of accessibility and levels of authorisation into the folders were discussed in the official meetings. The practices of meetings and policy were integrated within this process, embedding the ultimate strategy, use of IT, into the practices of each staff member involved. Staff were openly appreciative of this level of communication both in the policies and through the meetings.

In an analysis of the outcomes of these actions taken in the second intervention by the researcher in collaboration with senior managers and with staff, it was revealed that

communication problems within the organisation appeared to have been resolved and the company could expect improvement in work performance as a result. Staff members better understood their roles and better understood how to make their work more effective. In addition, staff members were able to use computers, software and applications more efficiently because training was helpful and enhanced their skill to operate computers. In summary, IT policy, official meetings and training were the right method to enhance the introduction of IT in the organisation to improve work processes and performance with the CCC Company. Mr RJ commented that:

IT policy is of vital important to the performance improvement process of the company. Management level needs to include their vision on the IT policy to improve their business performance.

The results of an analysis of interviews with suppliers and customers showed increased satisfaction from both customers and suppliers, in that they had better communication processes with staff in the CCC Company. Communication problems identified by customers and suppliers were minimised and decreased almost to zero level, thus cost of operations were also minimised. The effective outcome was that the company received more orders from the customers as well as costs of logistics were minimised. In turn, customers received products more accurately and on time. They could ensure timely products and they were satisfied with the quality. This is summarised in the text box below.

Review/outcomes of second intervention

- The communication problem and some of the work processes were improved
- Staff members are able to use computers and new computer applications more efficiently
- Suppliers were satisfied with the orders from the company as they could manage and minimise the cost of wrong orders
- Customers could follow the progress of their orders in a timely and accurate manner
- Orders were more accurate and deliveries were on time

6.2.5 Phase 5 – Summary and solutions for future actions

In summary, the researcher and the IT manager concluded that implementing a training program, a set of IT policies, and regular formal meetings was driving further improvement in the work of staff and in the operations of the company after the initial implementation of the four IT projects. This is summarised below:

Summary

- Staff members were more willing to join training sessions. They felt that the training provided them with better knowledge and they could use and apply it to their work environment and make work better
- Staff members increasingly knew how to share information and help the organisation to save costs
- The information sharing process was also achieved and performed more efficiently
- Senior staff members had more time to spend on other crucial tasks
- Staff members could access information and learn information on their own
- Staff agreed that their work became more efficient
- The supply chain relationships with suppliers and customers improved
- Staff members could work in the organisation more efficiently and effectively
- The performance of the organisation improved overall

One of the key outcomes of the evaluation of the two stages of intervention into CCC's use of IT to improve both internal and external working relationships, was that there was an internal drive for the adoption of more IT at all levels. The researcher, the CEO, the senior managers and the IT manager all concluded that, as a result of the IT projects, the additional IT projects should be continued and that the other twelve projects originally planned in the 'needs analysis' phase, should be implemented. At the same time, training had to be continued to increase IT adoption levels within the organisation. The intent was to continuously improve the work systems and processes of the company overall.

Table 6.4 presents the list of the other twelve IT projects to be continued in the next stage of implementation (in the highlighted colour). This constituted the key decision of this third action cycle and in 2012 and 2013 these new IT projects have been implemented and are still in implementation. Some elements in these projects, such as the ERP system, are very complicated and expensive.

Table 6-4: IT projects at the CCC Company for the year 2009 – 2011

IT Projects Development	Implementation
1. Network Development in Main Office (WAN, LAN, and Wireless System)	Phase 1
2. Network Development in Factory (WAN, LAN, and Wireless System)	Phase 2
3. Connectivity of networking between main office and factory	Phase 3
4. Internet system via WAN, LAN, and Wireless System	Phase 1
5. Database Management System	Phase 1
6. Website Development for Main Office	Phase 2 and 3
7. Website Development for Factory	Phase 2 and 3
8. Website Development for Museum	Phase 2 and 3
9. ERP system development	Phase 3
10. Finger scan systems	Phase 2
11. CCTV system	Phase 3
12. PABX telephone system	Phase 2
13. IT regulation manual for staff members	Phase 2 and 3
14. E-mail system	Phase 2
15. Intranet system development	Phase 2
16. Needs assessment for IT tools and equipments	Phase 1 and 2

The following section discusses the identified benefits of the IT projects undertaken between June 2009 and May 2010.

6.3 Information sharing improvement through IT projects

Information sharing was enabled in a better system and was facilitated for the staff members using IT to share and utilise in the long run. Policy, training and IT projects were instruments adopted as tools that drove staff members at CCC to organise knowledge sharing in a systematic way. Two perspectives, both from the management level and at the practical level, demonstrated improvement of knowledge sharing through the IT projects, through a resultant change in company culture, and through the business policy of the organisation. Mr TN identified that:

We also discussed the applications and software that is needed in our organisation. We never have official meetings but we have started having them now. However, the objectives and purpose of meetings have to be clarified before they have the meetings. Sometimes, we found that we really had no idea what the meeting was about. But the culture is changing...

According to Mr TN, the company had developed clear objectives on policy development and IT projects to facilitate quality improvement in overall organisational performance. Mr TN made it explicitly clear that IT and company policy did motivate the staff members to share their information with other staff members. This was confirmed by other staff, and by other senior managers.

Mr RJ agreed that the new change was in a positive direction. He commented that some staff members were aware of the importance of IT but they did not know how to undertake the projects. He stepped in and helped the researcher to proceed and progress the projects.

Originally, someone else handled the IT projects but they did not have anything at the policy level in the beginning. They just know that they had to do it, but they did not know exactly what they had to do. They just could provide suggestions but they only have a small role in IT. Then IT could not be fully utilised from the beginning.

Mr RJ added that the performance of policy development and IT implementation in the organisation could drive the CCC Company to use IT infrastructure for knowledge sharing and improve knowledge and information management in the organisation more efficiently. As a result, employees could undertake their duties more efficiently and that would, he believed, lead to higher organisational performance. Mr RJ trusted in the business policy and the implementation of IT projects in the organisation as he could ensure an increasing level of

organisational performance through utilising IT infrastructure within the organisation in the right direction. Mr RJ commented that:

I had made things realistic and tangible. I want everyone to trust that IT can solve administrative problems and can assist the learning process, data transfer, and knowledge transfer for staff members in our company.

Mr RJ summarised the first six months of policy development and implementation of IT projects (Phase 1):

I could conclude that the CCC Company only needed the network system and data management system in the beginning and then we needed other applications and hardware to support the network system and works in later stages.

Mr ST observed improvements in the organisation through the employees' behavior in utilising IT infrastructure and was satisfied with the outcomes from acquiring a business policy and IT projects. Mr ST understood later that the need assessment for IT helped the organisation reduce the cost of investment for IT infrastructure. Mr ST commented:

We can see that our staff members utilised IT equipment more efficiently. They use software and applications that are compatible and we do not have to edit information when we need to reuse them in our department. The information is more unique.

The IT projects in Cycle 2 enhanced staff members' ability to more efficiently undertake their work tasks. Each staff member learned how to drop his or her individual information in the data warehouse and store that information for future reference. Each staff member also learned how to share information among other staff members in the same division and across divisions in the same company. Staff members knew how to retrieve, edit, and modify information for individual purposes, for example the sales team knew how to tailor information to offer to customers when requested.

The Cycle 2 IT projects were fundamental to the development and growth of the CCC Company and staff members were able to learn that rapidly. They embedded their practice into the strategic direction and strategic actions of the company. IT projects in cycle 2 were found to be effective and used for knowledge sharing effectively for the organisation. Mr RJ supported Mr TN's statement that improvement of IT utilisation could be expected at later stages. It was the improvement to the supply chain that was driving the strategy from the beginning.

6.4 Information sharing and the supply chain design

The shared belief at all levels in the company was that the dynamic capabilities in the organisation led to improved quality performance of the organisation. In acquiring policy development and implementation of IT projects, the organisation was able to better manage knowledge sharing. The staff members could share and utilise information and knowledge more accurately, thus increasing the capability level of the organisation. Five major capabilities the company wanted the staff to have, which include customer focus capability; supply management capability; integration capability; measurement capability; and information exchange capability, are shown in Table 6.5, and argue that improvement of knowledge sharing supports logistics capabilities and leads to quality performance along the supply chain of the CCC Company that could be summarised between February and April 2010.

Table 6-5: Improvement of knowledge sharing in Logistics Capability at the CCC Company

Capability	Description	CCC Company
Customer Focus Capability	Improvement in knowledge sharing could enhance an employees' ability to know and understand the customers, be able to provide product or service differentiation and service enhancement for customers.	Staff members knew how to use computers and software. They could use computer to record important information about customers and share this with other staff members in the same department.
Supply Management Capability	Improvement of knowledge sharing in the organisation could help the organisation to minimise total system cost, save time in overall activities, respond to demands, and create standardisation in the organisation.	Information that was shared amongst staff members in the same department, which could then be shared across departments.
Integration Capability	Improvement in knowledge sharing in the organisation could lead the organisation to achieve unity in efforts to meet organisational goals, which are to increase profit levels and increase quality	Staff members increased the level of information sharing that benefited the CCC Company. The overall cost decreased as the information was more accurate and mistakes within the organisation were minimised.

	performance of the organisation.	
Measurement Capability	Improvement in knowledge sharing could help a firm to monitor internal and external operations, and align with strategy that creates accuracy in business operations and the supply chain.	Staff members helped each other to monitor business processes as they shared information amongst themselves, both within and from outside the organisation.
Information Exchange Capability	Knowledge sharing improvement could help the organisation to create, develop, and standardise the information that staff members could store, acquire, analyse, and distribute both internally and externally to the other stakeholders such as suppliers and customers.	Staff members used the same format of documents and helped each other to monitor appropriate formats to use. Each department helped each other to monitor their information and corrected them before sharing across to other departments.

In summary, these capabilities: customer focus; supply management; integration; measurement; and information exchange capability, were found in the CCC company and were enhanced as a result of the IT projects in the first intervention. They were then further enhanced with the implementation of a training program, with the development and implementation of a suite of IT policies, and with the enhancement of communication through the use of regular, formal meetings. The CCC Company believed that these capabilities were a means of first improving and then sustaining their competitive position in the industry.

6.5 Summary

This chapter highlighted that policy development, training and meetings could enhance IT projects to be more effective and efficient. This was to ensure that implementation of IT project support improved knowledge sharing in the organisation. Both management level and practical level perspectives were used to describe their perceptions of the change and to confirm that policy development and IT projects were important factors that led to an improvement of the knowledge sharing process in the organisation. Figure 6.5 shows the outcomes of each phase in the Action Research in Cycle 3.

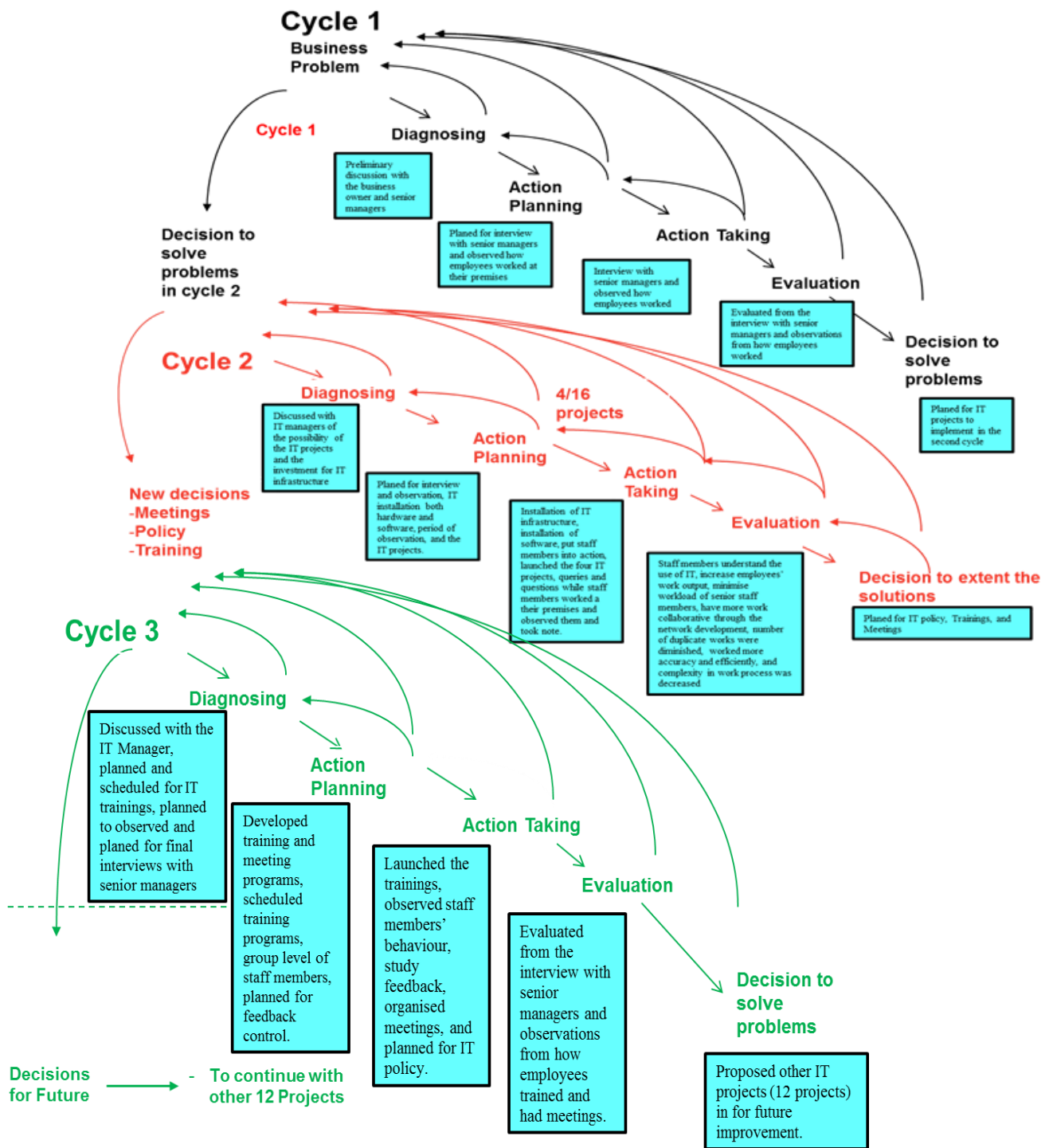


Figure 6-5: Three action research cycles

In this second Intervention using IT within the CCC Company, the overall strategy, the systematic and planned actions taken to enable that strategy (what Jarzabkowski et al. 2007 called Praxis), were become part of the practices and behaviours of the staff, the senior managers and the CEO. The loop of strategy become practice and practice embedding the strategy was beginning to become clearer to the CEO, senior manager and to the researcher.

In the work practices of the Company, the expectations of the strategy were being realised. Within the actions of the senior managers and the researcher, the realisation of strategy was being seen to impact not only on the expectations of staff to work better and more effectively, but also on the relationships those same staff were having with new and old suppliers and new and existing clients, impacting directly on company performance.

The final chapter evaluates the impact of the strategic decisions made in the CCC Company to improve their supply chain relationships by using IT to improve internal work processes, both from a practical perspective and from the perspective of analysing a strategic process using a 'strategy as practice' framework.

Chapter 7

DISCUSSION AND CONCLUSION

7.1 Introduction

This research was designed to resolve the problem of a lack of improvement in the supply chain relationships at the CCC Company. This research studied the impact of planned changes with the introduction of information technology on the internal operations of a Fire Truck manufacturing company as a strategic means to improve its supply chain relationships and therefore its competitive positioning. Supply chain efficiency was not improving, with increasing costs and with relationships with both upstream suppliers and downstream clients in the supply chain becoming less satisfactory. The complexity of work inside the company, the apparent inability to coordinate work efficiently amongst staff members, and miscommunication amongst staff members resulted in delays in work processes and therefore both delays in ordering supplies and delays in delivery of fire trucks to customers.

The CCC Company decided it needed a strategy that describes the design or architecture of improved value creation, delivery, and capture mechanisms to provide appropriate direction to the business (Carter et al. 2008; Jarzabkowski 2004; Jarzabkowski & Spee 2009). The importance of such a business strategy was in defining the direction that the business delivers value to customers, entices customers to pay for value, and converts those payments from customers to profit (Brandenburger 2010; Teece 2010). The CEO and senior staff decided strategically that the introduction of IT would enable the company to address the effectiveness, cost and relationship issues of the company. The research involved Action

Research through three cycles and two interventions, with the researcher being based in the company throughout the research process.

This research sought to solve a problem identified in the company and to strategically improve work processes within the company. This research then aimed to:

- 1) Understand the work processes in the business;
- 2) Identify factors affecting quality in supply chain management in Fire Truck manufacturing to improve internal communication and affect relationships in the company supply chain; and
- 3) To use Action Research through three cycles to examine the impact of IT on the business.

To achieve these research objectives, this research has attempted to answer one major question:

How does the introduction of an IT-based work system impact on supply chain management both internally and externally in a Fire Truck business in Thailand?

7.2 The CCC Strategy – Three cycles and two interventions of Action Research

The research was conducted over three Action Research cycles and included two interventions, previously summarised in Fig 6.5. The researcher, the CEO and the senior managers in the CCC company were aware that, in order to be able to compete with their competitors, a business had to create its own competitiveness and that IT could help to foster their strategy to reach that business goal (Abdul & Counsell 2012; Grover et al. 1995; Thong & Yap 1995; Yeh 2012). Using the Action Research methodology combined with observation, interviews, discussions, and both formal and informal meetings, the researcher was able to evaluate the impact of the two sets of interventions in the company. The first intervention introduced four IT projects designed to enable better work processes and information sharing, which was intended to facilitate better internal communications between staff, and better external communications with clients and suppliers. The second intervention used additional training programs, clear policy directives and improved communications through meetings to embed the impacts that resulted from the first intervention. The impacts identified in this research from intervention one is summarised in Table 7.1.

Table 7-1: Review of impacts in CCC Company of the four IT projects

Outcomes	Related benefits
- Staff members started using computers at their workstation rather than waiting for other staff members who were competent with computers to operate the computer on their behalf	Staff got used to working with IT and have acquired more IT knowledge about how to use computers and share information electronically
- Staff members stayed late at the office in the first month after the IT system was implemented	Staff had more IT knowledge and enhanced their computer skills
- Staff members work more accurately and efficiently	Increased work efficiency by staff using computers and the Internet to interact with other staff members within the company and externally
- Computer skills for staff improved and staff members felt comfortable operating computers and understood the importance of using computers	Increased work skills and capacity to work. Staff members have better skills in using computers and relevant software
- Better database management systems that staff members found easy to access	Increased work skills and capacity to work
- Complexity in work processes decreased and were simplified by the use of IT	Minimised confusion about work priorities and responsibilities, and reduced levels of complexity caused by other staff members within the organisation through non-cooperation
- A better mutual understanding of staff members towards the use of IT systems and equipment	Increased work skills and capacity to work
- Better information sharing processes, enabling staff members to retrieve information more rapidly	Increased work skills and capacity to work
- Suppliers received orders in a timely and accurate manner	Increased level of work efficiency because CCC could use computers and the Internet to place orders in real time with clear explanation. Suppliers could send supplies correctly and accurately. Also, suppliers could respond to queries quicker and more accurately. The communication breakdown problem was minimised and delivery costs

	decreased
- Customers were satisfied with communication system and processes as they could receive information in a timely and accurate manner	Increased levels of work efficiency because CCC allowed customers more channels to contact them and learn the progress of orders. Customers had more confidence with products through the use of IT. With the new management of information and the use of IT, customers could track information and products at any stage of production. Customers had more satisfaction from the use of IT
- Staff members had the ability to work more collaboratively through the network and could respond to customers or clients more accurately	Increased level of work efficiency by using information sharing processes via the use of IT. Customers could expect to receive better communication, which provided more accuracy. They could ensure that the CCC Company could deliver products on time. In many cases in the past, customers had to wait for products longer than what was said in the contract. That was because of the miscommunication throughout the process
- The amount of duplicate work diminished	Increased work skills and capacity to work, and staff members knew their own responsibilities
- Faster learning about existing company products, new products, and new parts	Increased work skills and capacity to work
- Data warehouse now contained more substantive information that could be shared amongst staff members within the organisation	Increased level of work efficiency as staff members now have a good resource to store and exchange information
- Increased employee work output and work efficiency led to better organisational performance	Increased level of work efficiency by the use of IT, which could enable staff members to undertake tasks more professionally
- Minimised the workload of senior staff members and allowed time for them to concentrate on other important duties, such as increasing sales, planning for market penetration, finding new markets, and increasing customer service satisfaction	Increased level of work efficiency as senior managers had more time to undertake other important work and staff members could share information amongst themselves through the company's database and server

<ul style="list-style-type: none"> - Internet system facilitated both the communication system and capability within and outside the organisation 	<p>Increased level of work efficiency because staff members could use the Internet to communicate with other stakeholders such as suppliers and customers, and also amongst themselves within the organisation</p>
<ul style="list-style-type: none"> - Each staff member could search for information from the database and only consult with senior staff members when necessary 	<p>Staff members had better computer skills to search for information through the database of the company</p>
<ul style="list-style-type: none"> - Staff members were ‘more comfortable to communicate amongst other staff members as well as with management more efficiently’ 	<p>Increased information sharing ability at work as staff members learned how to use computers and to shared information through the server, and used the Internet to communicate with staff members and managers when they worked outside the company to report and update information</p>
<ul style="list-style-type: none"> - Staff members increased their skills in regards to using computers 	<p>Have more IT knowledge</p>

7.2.1 Benefits to upstream suppliers and downstream clients

The upstream suppliers would have better communication with the CCC Company and could respond to CCC’s queries promptly and accurately. The communication breakdown problem was minimised and delivery costs decreased. Being able to better organise orders and match them to the demands of the two factories assembling the fire trucks meant that more efficient and regular means of delivery could be organised. A systematic arrangement with delivery companies and modes of transportation meant that the company benefited from a continuous supply of products, on time ordering and delivery, and consistent costs. These costs also decreased in relation to clients because communication with clients meant that better planning of delivery could be attained. In many cases, the CCC Company had been paying penalty charges for late delivery or additional charges to get products delivered urgently and through more expensive transportation options. Better planning as a result of the use of the IT system meant this decreased.

7.2.2 Benefits to the organisation

Staff members have better skills in using computers and relevant software. The information sharing took place and multiple staff members could access the same information at the same

time with data being able to be shared internally and externally. Business operations could improve business efficiency and achieve higher performance and profit.

7.2.3 Benefits to downstream customers

Customers could expect to benefit from a better communication process, with improved accuracy. They could ensure that the CCC Company could deliver products on time, with no delay. In many cases in the past, customers had to wait for products longer than the date agreed in the contract. That was because of miscommunication. With new management of information and the use of IT, customers could track information and products at any stage of the production process. Customers had more satisfaction from the company's use of IT.

Results of the first intervention led to decisions for continued improvement in business processes in the company. Those decisions were:

- Assess the need for training and organise training for staff members to understand their actual needs
- Learn about the need for policy to support employees to work with IT equipment, then assist the company to develop appropriate IT policy for implementation
- Develop training programs to assist staff members to develop their knowledge about the software and techniques to operate computers more efficiently
- Design appropriate meetings for staff members as official meetings were found to be useful and of benefit to the company overall
- Minimise complexity in using computers and sharing information because staff members could retrieve information at any time and with little difficulty
- Facilitate and coordinate IT technicians to understand the needs of employees to support their work

The impacts identified in this research from intervention two are summarised in Table 7.2.

Table 7-2: Review of the impacts of the implementation of IT policy, meetings, and trainings in the CCC Company

Outcomes	Related benefits
- Communication issues and some of the work processes such as information was not shared amongst staff members was resolved	Staff members could understand each other and the directions of supervisors correctly and

	accurately
- Staff members work more efficiently	Cost reductions could be seen such as the IT minimised problems with paper work that staff members used to send back and forth with suppliers. Sometimes, suppliers delivered wrong orders because of the misunderstandings of staff members at CCC
- The company could now receive more orders and deliver products to customers in time and to their satisfaction	Gained better reputation from customers
- Staff members are able to use computers and new computer applications more efficiently. This could be seen through the third cycle after the training process	Staff members have more IT knowledge and perform their tasks more accurately, which minimised mistakes and defect products
- Suppliers were satisfied with the orders from the company as they could manage and minimise the cost of wrong orders. Suppliers encountered wrong orders placed by the CCC Company several times in the past	The cost of supplies decreased unexpectedly as supplies did not have to be shipped back and forth in order to correct wrong orders. This was because CCC had a better communication process
- Customers could follow the progress of their orders in a timely and accurate manner. This could be done through communication via the Internet	Allowed customers more channels to follow up and check progress of their order, which increased orders, and ultimately profits to the CCC Company
- Staff members were more willing to attend training sessions. They felt that training helped them to learn more and they could use this new knowledge in their everyday activities. Staff felt that they need more time to train and requested senior management to organise more training for them in the near future	Increased work skills and capacity to work
- Staff members knew how to share information and help the organisation to save money. Staff members now use software to share files and information via the data warehouse. The information is now shared amongst people in the same department and across other departments within the organisation	Increased work skills and capacity to work
- Senior staff members now have more time to spend on other crucial duties. This was because they did not have to spend their time only to answer repeated questions as they did in the past. Staff members could now retrieve information from the data warehouse	Increased level of work efficiency because the CCC Company could use computers and the Internet to place orders in real time. Suppliers could send supplies correctly and accurately. Also, suppliers could respond to CCC's queries promptly and accurately. The communication

	breakdown problem was minimised and delivery costs decreased
- Staff members could access information and learn information at their own pace. This was the major benefit of information sharing that led to business performance improvements	Increased level of work efficiency because staff members have more IT knowledge and performed their tasks more accurately, thus minimising mistakes and defect products
- The result of the second intervention indicated that training had to continue to increase IT adoption within the company. The intent was to continuously improve the work systems and processes of the CCC Company overall	Increased level of work efficiency, enabling CCC to be able to decrease overall costs in the long run and improve work performance

The impact of the IT projects on organisational performance could be clearly observed in the organisation and the improvements in work practices in the company were acknowledged by senior managers and by the staff themselves. The investigation showed that the better the alignment of IT software and applications with the organisation's competitive priorities and the better the alignment with strategic objectives, the better the outcomes of those objectives would be (Kearns & Lederer 2003; Li et al. 2009). In the twelve months of the intervention of the IT projects, the senior managers and CEO conceded that work processes had improved. The complexities of paper-based work had become simpler for staff. Information sharing was enabled via a better system and facilitated staff members in the CCC Company to use the IT system to increasingly share and utilise information, creating improvements in work performance. Other research by Fawcett et al. (2007) and Lee et al. (2000) also showed that well planned and implemented IT projects could improve the work performance of employees in corporate settings.

Policy, IT training, official meetings and the continuing IT projects in the second intervention phase of this research were instruments adopted as tools to further drive staff members within the CCC Company to increasingly organise knowledge and enable sharing in a systematic way, confirming what Ford and Staples (2010) and Lin (2007) showed in previous research. This research showed that staff members understood their roles better and understood how IT helped them work more effectively (5.3.3 and 6.3.3). Previous studies indicated that the use of IT could enhance organisational performance by sharing information about key business processes and activities (for examples Li et al. 2009, Li & Lin 2006, Sezen 2008, and Zhao et al. 2002). Information sharing decreased delivery time, reduced inventories, improved the capability to manage supplies, and thus improved the quality of business performance and

profitability (Yu et al. 2001; Zhao et al. 2002). In this research the CEO and senior managers agreed that the IT interventions had improved information sharing and that this had decreased delivery time, and improved the quality of business performance and profitability.

The study also found the use of IT (hardware, software, and the Internet) helped the CCC Company to shift their basis of competition towards quality and service improvement, creating a better competitive position in the Fire Truck manufacturing industry. Previous research by Li and Lin (2006) argued that this shift was essential to improve competitiveness. Yu et al. (2001) and Zhao et al. (2002) showed that enhanced integration by using IT across departments could impact many dimensions of business performance. In the CCC Company, IT integration across the company with individual employees from one department talking to other departments was shown to have an effect on costs, the quality of products, delivery of products, time management of staff at all levels, flexibility in work practices, compatibility between staff, and profits (albeit with only anecdotal evidence here).

The results of this research show that successful management of the supply chain required the company to go beyond existing practices, both internally and externally. This confirmed the findings of Brynjolfsson & Hitt (2000) who argued that successful management of supply chains was not only a requirement to produce products and sell to the customers, but also to communicate well with both upstream suppliers and downstream customers and integrate business processes amongst stakeholders or partners along the supply chain.

To improve the communication process, it is argued that a company has to improve their communication systems through information sharing and the use of IT (Fawcett et al. 2007; Hsu et al. 2008; Li & Lin 2006). The description and analysis of what happened in the CCC Company showed that this was the case and the improved communications within the company resulted from IT interventions and did improve communication in the supply chain.

These outcomes from the strategies associated with IT interventions in the CCC Company represent one level of analysis. The research shows that the series of IT and policy interventions resulted in identified change and improvement in the work practices of employees, improved information sharing across the company leading to improved communication and business relationships with suppliers in the CCC supply chain, and to more consistent and improved delivery times of products to their clients. However, such a level of analysis is superficial. In the literature review (Chapter 2), it was proposed that a

‘strategy as practice’ re-conceptualisation would offer a more in-depth form of analysis of the effects of a strategy to use IT to address business problems identified in a company.

7.3 Understanding the intervention processes – strategy as practice

According to ‘strategy-as-practice’, a key element is to identify and describe the activities or practices happening in the strategy process. These practices are not static nor immutable (Jarzabkowski et al. 2007), but are diverse and variable, often combined, altered (Orlikowski 1996; Seidl 2007) or iterated (Corbitt 1997, 2000).

Throughout Chapters 4, 5 and 6, the process described showed that from an initial decision to address a business problem related to the needs to improve the competitiveness of the CCC Company, various strategies were implemented to change practices in the company. The strategies and practices used were (Table 7.3):

Table 7-3: Strategies and Practices

Strategies	Practices
Implemented needs assessment for IT tools and equipment	<ol style="list-style-type: none"> 1) Senior managers interested staff members become to aware of the IT implementation within the organisation 2) Staff members could identify IT tools and equipment suited to their work 3) Staff began to use all of the new IT systems and the networks made available in the company 4) The work practices of staff changed as they used more and more features of the software made available to them
Purchased servers to create database systems in CCC	<ol style="list-style-type: none"> 1) Staff members created files in the database 2) Staff members shared files in the database 3) Staff members used files in the database to share with suppliers
Purchased computers and accessories such as printers and scanners to support employees’ works	<ol style="list-style-type: none"> 1) Senior managers sourced and investigated information, then placed orders for computers and accessories to support employees’ work 2) Senior managers and IT technicians checked specifications of computers and accessories
Installed network in the main office (WAN, LAN, and Wireless Systems);	<ol style="list-style-type: none"> 1) Senior managers controlled the installation process to ensure WAN, LAN, and Wireless systems worked in good condition 2) Senior managers and the IT technician verified and endorsed network installation and made the network more useable by staff. 3) Staff used networks increasingly, albeit initially with private information, but then increasingly within their work
Installed Internet system via	<ol style="list-style-type: none"> 1) Senior managers controlled the installation process to ensure the

WAN, LAN, and Wireless Systems	<p>Internet system via WAN, LAN, and Wireless systems worked in good condition</p> <ol style="list-style-type: none"> 2) Senior managers and the IT technician verified and endorsed the Internet systems and access in the company 3) Staff used the Internet continuously in their work.
Installed database management System	<ol style="list-style-type: none"> 1) Senior managers controlled the installation process of the database management system 2) Senior managers and the IT technician verified and endorsed the database management system 3) Staff learnt how to use the database system and over the period of the research used the database more and more in their daily work
Installed software for servers and computers	<ol style="list-style-type: none"> 1) Senior managers controlled the installation process of software for the server and computers 2) Senior managers and the IT technician verified and endorsed software installations 3) Staff began simply accessing software like Excel and Word, graduating over time to using Excel for calculations, using Word for documents and ordering, using PowerPoint presentations, and then progressing to using the database software and ultimately in the case of many staff, began to integrate their use of various software sources into one task where appropriate
Implemented need assessment for trainings	<ol style="list-style-type: none"> 1) Senior managers interested staff members to enhance their computer skills 2) Senior managers investigated staff members' need for trainings 3) Staff members participated and agreed to improve their computer skills through training 4) Staff recognised the value of training sessions and were quickly able to include new skills as they worked
Implemented Microsoft Word, Microsoft Excel, PowerPoint Trainings	<ol style="list-style-type: none"> 1) Senior managers investigated computer training and its training environment to ensure staff members' work efficiently after training such as work accuracy, and cost minimisation 2) Staff members knew how to operate computers much better and had better computer skills
Implemented IT policy and meetings in regular basis	<ol style="list-style-type: none"> 1) Senior managers developed IT policy to support staff members to use computers more efficiently such as rules, regulations, and instructions for staff members to follow 2) Senior managers organised official meetings on a regular basis to disseminate information officially to staff members – such as to have a regular official department meeting every Monday morning at 9.00 am 3) Staff members were reinforced on computers usage via rules and regulations of the company 4) Staff members were highlighted with relevant information and could be reminded officially to enhance the communication process within the organisation

These practices within the strategies were not static and they did change, sometimes through the demands of work and policy, other times through acceptance and play. The strategies changed and were modified to suit the context of the company and the needs and interdependencies of the staff doing key work, and managers at all levels, facilitating both work expectations and changes as a result of the strategies used. For example, the strategy of providing an IT infrastructure, such as computers and software programs, to facilitate employees' work changed with training to enable staff to have more IT knowledge and skills. Employees had felt uncomfortable using computers with little or no knowledge. Then the strategy of providing IT infrastructure with training changed to provide IT policy and official meetings when employees needed to ensure their work processes and direction were on the right track.

The research showed that staff members in the different departments in the CCC Company used the IT in different ways to adapt it to their needs; for example the sales teams needed accurate and consistent information from the company, and access to consistent presentations of company products so that the needs of clients could be met. The staff in the finance department needed account data and used spreadsheets.

Over the period of the research, their skills at using these pieces of technology improved and they became more efficient and by sharing what they had learned, other staff were able to use that learning and change their work practices, too. It can be argued that they embedded these practices within the actions of the strategy. The strategy became their practice. It was not immutable and never static. The research showed over the twelve months of this study that change was constant and practice became more and more aligned to the strategy proposed. Staff members spoke about the IT strategy as improving what they did. The senior managers talked of the strategy as improving work processes and company performance. Clients and suppliers spoke of improvements and noted the practices of staff reflecting the intent of the strategy. In Chapter 2, Spee and Jarzabkowski (2011) argue that throughout strategisation there are periods or episodes of talk and planning, recontextualising and decontextualising, leading to increased acceptance of the authority of the strategic plan (Fig 2.4) (p.23). In the CCC Company there were these periods of talk and planning and the gradual recontextualising of the practices associated with the IT into the strategy itself, increasingly the authority of the strategic devised by the CEO to improve the company performance.

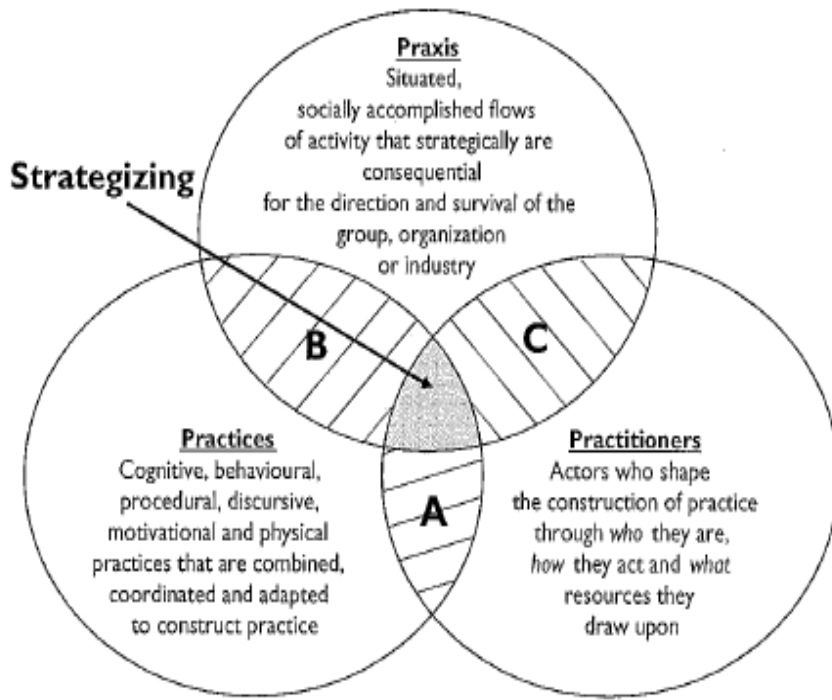
The CCC Company also had maintenance systems to support staff members (Chapter 6). This maintenance process, too, was further indication of what happens when strategy becomes

practice in an organisation. The focus was not, in this case or those described above, on any document or statement other than IT was being used to improve operations in the company. Doing that improved the relationships between the company and its upstream customers and downstream clients. Each of the actions taken in both interventions showed that strategy became practice through action. As practice happened, the strategy became the practice itself and its acceptance became part of that practice.

One of the key outcomes of the IT interventions in the CCC Company related to the impact of the IT on staff practice first, then their increased willingness to share those practices in meetings and informally. These actions not only diversified what staff did, they diversified the way work was done across all departments. The practice of sharing created new learning, more action, improved work practices and it can be argued, further embedding practice within strategy. When talking with or interviewing staff, what they were doing in their work was what the strategy was intended to do, developing over time, changing work practice, affecting relationships within and across the company and impacting positively on business relationships with suppliers and clients. Ultimately, the CEO and senior managers agreed that business performance had been affected in a good way¹. The practices changed and diversified or altered in ways similar to those previously reported by Orlikowski (1996) and Seidl (2007).

Jarzabkowski et al (2007) have argued that strategising emerges from the consequences of praxis, the cognitive and behavioral practices as actions and the deeds and actions of practitioners (Fig 7.1)

¹ In time the impact may be quantifiable. No business data was possible to be reported here. Only the analysis by the CEO and senior managers' recognition of improvement in their words was possible.



Strategizing comprises the nexus between practice, practices and practitioners. A, B, and C represent stronger foci on one of these interconnections depending upon the research problem to be addressed

Figure 7-1: A conceptual framework for analyzing strategy as practice

Source: Jarzabkowski et al. (2007, p. 11).

In the CCC Company the praxis was a plan to improve work processes. The practices were four IT projects, IT policy, meetings, and training and the accompanying individual practices in the workplace developed and used by staff; and the practitioners were the CEO, the senior managers, the researcher, the staff in the company, the clients downstream in the supply chain and the suppliers upstream in the supply chain. In the analysis above, the practices in the company were given substance by the actions of the staff using the IT, using the software, using the Internet, practicing out of hours learning and sharing of knowledge, adapting the IT for their own needs as well as for work, for sharing information and teaching others how to use the software more effectively. Over the twelve month period, the practices changed. New ones emerged and old ones disappeared. Work in the company was no longer the same daily routine. The analyses presented in Chapters 5 and 6 highlighted these changes and illustrated the way staff changed what they did and how they worked. The staff and the other stakeholders were the practitioners, who together created the strategizing process. They made the intent of the strategy to use IT for business improvement praxis. They, guided by the senior managers plans and the interventions planned by the researcher as the praxis, made what they did reflect the intent of the strategy. They enabled ‘strategy as practice’.

However, in this emergent process the strategy was contested, sometimes by senior staff members at the beginning and by various staff members at times. Here practitioners were impacting on practice and interfering with the orderliness of planning in the praxis of the strategy. Some managers believed that they had more experience in the industry than the researcher. They did not trust that the researcher would be able to help improve operational processes in the business. They believed in their performance as they had been in the industry for more than 30 years. They challenged the basis of the praxis in ways described previously by (Jarzabkowski et al. 2012). However, after a couple of meetings with the CEO, the senior managers, and some staff members, some of them reduced their opposition as they gained more information.

Argyris and Schon (1978) suggest that organisational learning occurs when members of the organisation act as a learning agent for the organisation, responding to changes in the internal and external environment of the organisation by detecting and correcting errors. The CCC Company did not have a culture of organisational learning at the beginning and the IT strategy challenged them with change. It affected their institutionalised practices and made them feel insecure especially about their jobs. Some of them feared that the researcher would take their role and they would lose their jobs. It is argued that fear acts as an effect on praxis and practices within the strategising process (Jarzabkowski et al. 2007; Kock & Lau 2001). That was evident in the CCC Company following initial announcements about using IT to deal with specified business problems.

Some staff members also contested the strategising process. These staff members also feared that the researcher would create more jobs for them to do and they therefore would have more responsibilities at work. They did not recognise that IT would help them to decrease their workload, a reflection derived from the research (Cegarra-Navarro & Cepeda-Carrion 2008). To deal with this contestation of praxis in the CCC Company, the researcher had to work through three Action Research cycles to ensure improvement in the company work processes. Levitt (1965) argued that improvement as a result of strategy had to be well planned and implemented to overcome opposition. The researcher used an initial cycle of needs analysis and requirements gathering as a process to inform participants, the practitioners, to ensure the orderliness of praxis and the emerging practices were effective with the level of contest diminishing.

The contestation was resolved by meetings and the application of 'guanxi' (Chen & Chen 2004; Huang 2000) to form relationships with staff members and with some senior staff

members. Culture was difficult to change in the company, but it was possible to change due to the use of time as suggested by Wong and Tam (2000). Senior managers and staff members needed some time for them to trust the researcher. The researcher represented the praxis of the strategy and to create the conditions for effective strategisation, there was a need to get the support and co-operation of the practitioners at all levels to use, learn and then create their own practices. Time and trust became key elements in strategisation in the company during the first six months of the interventions. In addition, the role of 'power' and leadership played a key role as Markus (2004) argued. The researcher had to spend time with staff after working hours to become familiar with them and make them feel comfortable to talk to the researcher, which was also supported by a clear directive of the CEO and his stated desire to change the working environment and conditions of work in the company for the better.

The CEO used several meetings to inform his employees before the researcher started to intervene with the change process. He informed his employees both formally and informally to disseminate his plan and idea verbally. He understood that some employees, especially those who were senior staff members that had worked in the company for more than ten years, would feel uncomfortable with the change. It was his strategy to get them as practitioners in the company to accept the forthcoming praxis. The CEO trusted his own belief that if he had not decided to change, competitors would step forwards and he would find it difficult for his company to move forward and compete in the future. He trusted that it was a good time to change (Fawcett et al. 2007; Markus 2004).

This analysis has shown that the interaction of planned process, praxis, can interrelate with the actions of practice by practitioners to embed their practices within, and as, strategy. In the CCC Company, the initial strategy of IT intervention created by the CEO and then designed by the researcher with the senior managers, formed the praxis of situated, socially accomplished flows of activities that strategically are consequential for the survival and direction of the company.

Behaviors and practices were created, combined and adapted to construct practice by actors who shape practice through who they are, how they act, and what resources they draw on. The process of the IT interventions was informed by all of the stakeholders within a planned environment of the company and contextualised by the participants to suit their needs in a way that met the needs of their own work, their relationships with the supply chain and through this, created practices that enabled the strategy formed initially to become their practice.

7.4 Theorising strategisation

This research has shown at one level, corresponding to the analysis in Section 7.2, that the use of IT benefits to the organisation, as suggested by various researchers (Al-Alawi et al. 2007; Ashurst et al. 2012; Bresnahan et al. 2002), could create competitive advantage in a business (Fig 7.2) This research showed that the IT interventions created some level of success.

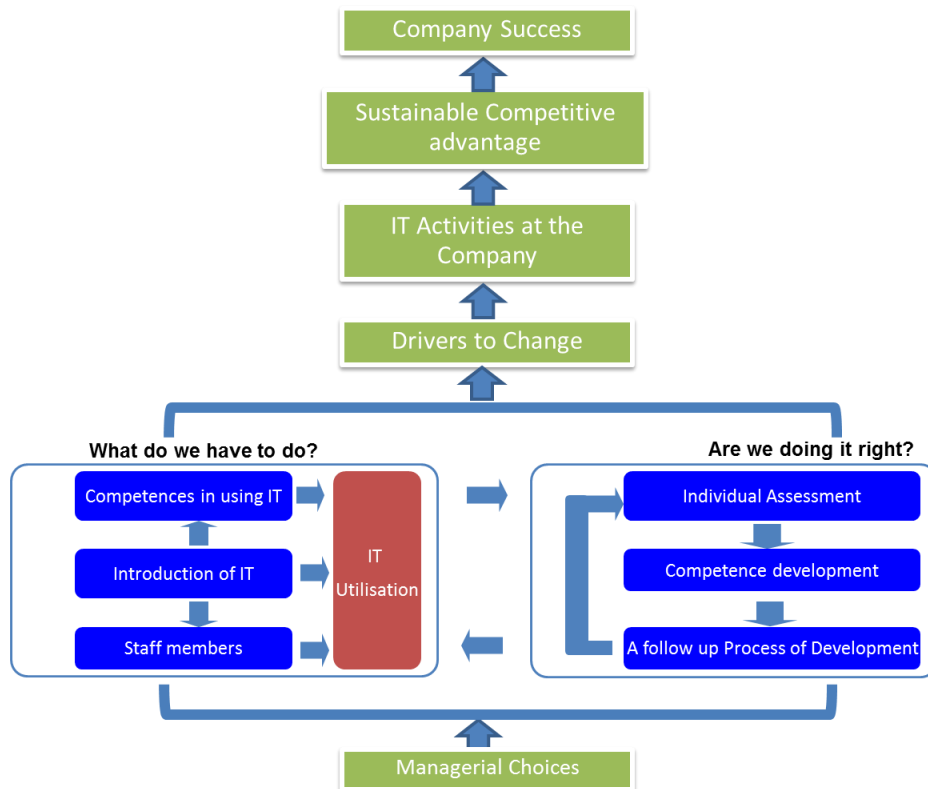


Figure 7-2: The determinants of success in a business by using IT

According to Porter (2007, p. 99), ‘while firms can redeploy or share resources, activities, and skill across different businesses, competitive value of such actions can only be measured in terms of some set of rivals delivering a discrete product or service to some set of buyers’. The company had to maintain its competitiveness to be able to compete with their rivals to be successful. The most important thing for the company was to choose appropriate strategies that could improve their business performance. Competitive advantage in the CCC Company was to add strategy in forms of activities, the ability to share information, and improve performance.

According to a ‘strategy as practice’ perspective, the researcher was concerned at a different level to Porter. The focus was on a study of strategy related to what people do

(Jarzabkowski et al. 2007). According to Jarzabkowski and Spee (2009, p. 69), 'strategy as practice' is concerned with 'the doing of strategy: who does it, what they do, how they do it, what they use, and what implications this has for shaping strategy'. This study then related to the stakeholders at the CCC Company and their supply chain.

In regards to the term 'who does it' (Jarzabkowski and Spee 2009), employees at the CCC Company were people involved in the adoption of IT processes, who took responsibility and performed activities at work.

In terms of 'what they do' (Jarzabkowski and Spee 2009), this research has examined through observation, interviews and discussions on how the management and staff in the company dealt with the four IT projects, implemented together with an IT policy and training schemes:

- Project 1 - Network development in the main office (WAN, LAN, and Wireless system);
- Project 4 - Internet system via the WAN, LAN, and Wireless system;
- Project 5 - Database Management System; and
- Project 16 - Needs assessment for IT tools and equipment.

The research described the nature of staff work and the impact of IT on those processes. The analysis focused on how they changed, how they adapted and the effects of the changes on their relationships both within and outside of the company. This analysis showed that strategisation happened over time as their practices, what they do, become the strategy, through the effect of the changes they were asked to undertake and then through changes they created through adaptation and information sharing.

In terms of 'how they do it' (Jarzabkowski and Spee 2009), the research showed that IT was used to influence change in the organisational culture of the CCC Company. Staff members were more comfortable using IT, even though some of them opposed it at the beginning. That was because they did not know how IT could be helpful to decrease their workload. Staff members used IT more and became better and more efficient and they could share information amongst themselves. The research shows that staff became willing to learn more, both formally in training sessions and informally through teaching each other and then 'practicing' after work hours. They also used the new IT policy, meetings and training to enhance their learning of IT use.

Jarzabkowski and Spee (2009, p. 69), asked ‘what implications this has for shaping strategy’. This research found the use of IT helped facilitate improvements in employees’ work, improved information sharing and the communication process both internally and externally, improved the accuracy of information used and stored in the organisation, and changed the behavior of employees. This created the conditions for the strategy to become embedded and become effective. It describes the process of strategisation. The use of IT was the gaining of substantial benefits from technology usage and provided the process that substantiated actions to enable competitive advantage to derive from improved business operations. The use of IT shifted the CCC Company from a pure traditional operations company to a more strategic one by using IT as tools to coordinate and accelerate physical and information flows starting from amongst staff members in the same department, across departments in the same organisation, and externally to upstream suppliers and downstream customers. This analysis using ‘strategy as practice’ enabled a more theoretical understanding of how strategy can be effective supporting the model shown above (Fig 7.2).

Figure 7.3 demonstrates the dynamics of these iterative changes in ‘strategy as practice’. Praxis and practices are sequential and iterative, adding another dimension to the nature of strategising. In this research, iterative processes moved forward from iteration one to iteration two and three respectively.

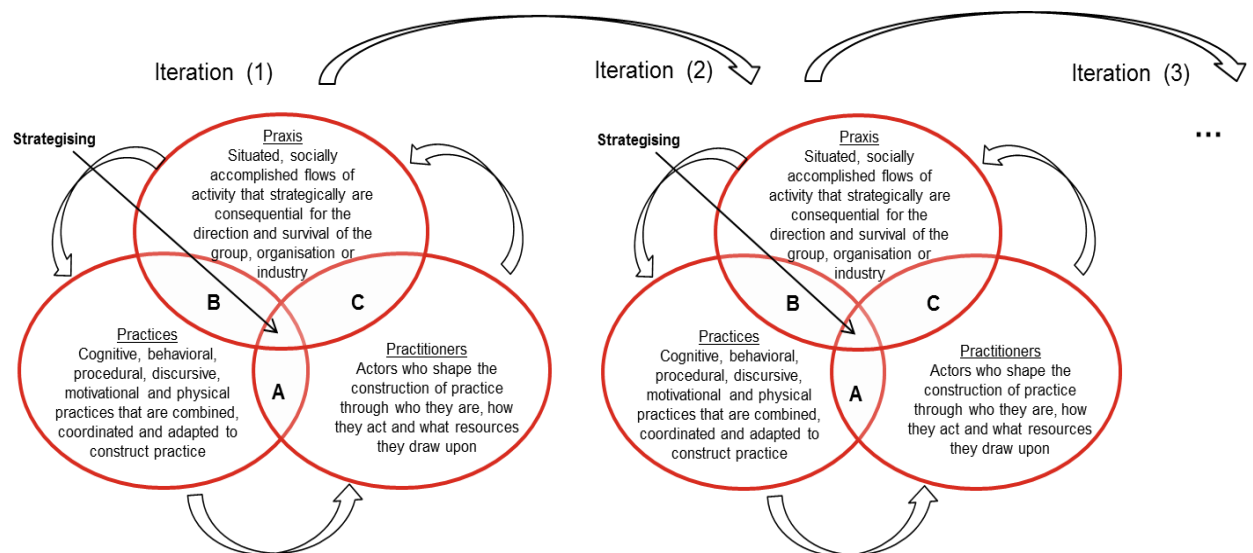


Figure 7-3: Strategy iterations

Source: (adapted from Jarzabkowski et al., 2007, p.11)

In the literature review (Chapter 2) it was proposed that IT is the hub, which, in this research, brings together the elements of supply chain, business performance, and information sharing

as a means to strategically resolve the business efficiency issues in the CCC Company's supply chain (Fig 2.6). This analysis of the process of strategisation in the CCC Company has confirmed that the improved performance of both the internal operations in the company and relationships up and down the company's supply chain, were directly related to interventions of the various IT projects. The network effects of change up and down the supply chain were derived from changing practices resulting from these IT projects and increased over the time of the project. Supply chains, as networks are reactive to changes, in this case from the core of one specific supply chain. The strategic value of the IT interventions through the research clearly affected relationships with suppliers through improved communications and more accurate ordering, and substantially affected relationships with clients through more effective selling and more timely order delivery. Internally, the IT projects fostered a community of workers where information sharing became more and more the normal practice. In this research, the IT was shown to be the catalyst promoting information sharing coupled with interventions from the researcher and the senior managers.

7.5 Summary

Information technologies (computers, software, and the Internet) have the potential to overcome organisational problems associated with a lack of communication and/or with coordination problems within an organisation. This research confirmed other research that IT policies can and do influence the actions of staff inside companies, can improve work performance (Ashurst et al. 2012; Thong & Yap 1995), and can lead to improved competitive advantage.

The research also showed that, for successful interventions using IT to change practices in a company, that company needed to be ready for change through ensuring that:

- The CEO, senior managers, and some new staff members are knowledgeable about information technology
- The CEO and senior managers are aware of the importance of IT and organisational culture within the organisation
- The CEO is an innovative person
- The CEO and senior managers have a positive attitude towards the use of IT
- The CEO and senior managers are aware of the importance of IT policy and official meetings that can help boost IT adoption and the use of IT within the organisation

Strategy was used in the CCC Company to create improved competitiveness in their industry. Using a 'strategy-as-practice' framework the research showed that the integration of praxis, practices and practitioners enabled the researcher and the CEO to understand how strategy becomes embedded in practice and practice becomes the strategy. As time went on through this case study, there was increasing evidence that the strategisation expected of the IT interventions was becoming increasingly institutionalised in what staff and managers did, how they did it and what the impacts were as strategy became an iterative process and enabled further changes to be implemented.

7.6 Reflections on using Action Research

Results of the application of Action Research and deliberative planned actions, indicated in the end that the business problem at the CCC Company was identified clearly and changed progressively through the form of interventions to enable solutions and enabled improving business performance. In the process of Action Research, individuals or professionals make independent decisions about which particular course of action to adopt. This research was conducted based on the concept of Action Research in making decisions through three Action Research cycles. Each cycle led to a better improvement. Doing a survey and or using interviews does not enable the researcher to actually influence the outcomes of processes. Action Research in the CCC Company enabled this to happen. In Action Research, the researcher and practitioners work together, sharing a mutual acceptable ethical framework, to solve the problem. This enabled the researcher to work directly to the point and helped the organisation to move towards their objectives, whilst it was part of the process of delivering satisfactory solutions.

In relation to the methodology used (Action Research), the researcher was able to experiment by learning through two deliberative and planned interventions and was able, throughout the process, to reflect on the effects of the two interventions and analyse them in relation to the theories used in this research (Avison et al. 1999; Rosemann & Vessey 2008).

The researcher learned from the participants and gained different perspectives from the interactions of one staff member to other staff members, from time to time, in each episode of the research (Hendry & Seidl 2003; Hodgkinson et al. 2006) and through each iteration (Corbitt 1997, 2000). Doing a survey or undertaking a set of static interviews at the end of an IT implementation process might have shown the same effects, but Action Research has enabled the researcher to be embedded in the company and therefore understand how the

effects happened, why some worked faster, how they could be changed throughout the process and why some were more effective.

This enabled the researcher to reflect on outcomes and better plan the next stage of intervention. Being part of the process and being part of its continual evaluation assisted the researcher and the company senior staff and CEO to make better decisions about working in the company.

The researcher could help the CCC Company to simplify representation of the complex activities that occurred in a changed effort and solve problems systematically as a roadmap to them in ways previously described by Rothwell et al. (1995). Results from this study provided the CCC Company with strategies, methods, and techniques to guide them with practices through the two interventions and enabled them to have a road map for the continued implementation of a further twelve projects, which at the time of writing of this thesis in 2012/2013 is ongoing.

7.7 Limitations of the research

Each research study has limitations and limitations can alter the outcomes of the research. In this research, the first limitation was a time constraint. The company wanted to implement 16 IT projects over a three-to-five year period. The limitations of doing a PhD required that the effects can only relate to the first four of these projects, and the implementation of IT policy, meetings and training sessions. In future, it would be useful to examine the full impact of all 16 projects on the company.

Secondly, the participants (the CEO, who was also the business owner, and managers) were concerned about providing information that might be accessed and used by their competitors and participants were afraid that others might use commercial-in-confidence material. As such, sometimes data about impact measurement was not released and the researcher relied on anecdotal information to evaluate the impact of the strategy outcomes.

Thirdly, all interviewees felt more confident over time that all information would be kept confidential. Initially, this meant some reticence to disclose. Some interviewees were defensive at the beginning of the interviews but became more relaxed at the end. This, in turn, was not a significant limitation as it was monitored by the researcher.

Fourth, another problem encountered by the researcher was the staff's varied level of computer knowledge and understanding about using IT within the organisation. There was a

big gap amongst staff members who understood the significant use of IT in the organisation. Some of them had no idea about how to operate computers at the beginning. However, this problem was reduced when the company motivated them and, in some occasional cases, forced them to use IT.

Fifth another limitation of this study is the potential for biased interpretation caused by the researcher interpreting the findings through the lens of own background and perspectives. This bias can be commonly found in business interviews.

Sixth, the data for this study came from one company in one specific industry. Other businesses might have different business conditions, a different organisational culture, or leadership styles, or leadership vision, or management systems, and the size of the organisation may vary. These conditions might impact on the company's strategy in implementing IT to facilitate their business operations. Future research should determine whether the reported findings from this research could be validated in other businesses, in other industries, or regions of Thailand or elsewhere.

Seventh, there were several limitations in the data collection procedures. Some informants were happy to provide information, while some of them were reluctant and felt uncomfortable to talk. The researcher took about two months until all staff members felt comfortable to talk and felt that the researcher was part of the organisation. Some staff members were even against the researcher. That was because of the organisational culture. However, future research should find appropriate ways to approach staff members or employees in the organisation.

7.8 Future research

In addition to the future research items listed above, this section addresses other areas for future research.

Firstly, this study can be used as a basic understanding for further research that explores IT importance for business operations, particularly in other Fire Truck businesses, using a qualitative approach. There are still some industries in Thailand such as the Original Equipment Manufacturing (OEM) industry and car industry that need business improvement. This methodology applied in those industries should enable them to better understand their issues and see ways to resolve them.

Secondly, future research should further investigate the business operations in the Fire Truck manufacturing industry by using a quantitative approach via surveys, as well as to include a greater number of organisations in the future. The study could also include perceptions of upstream suppliers and downstream customers to understand the IT environment and whether the use of IT supports the operations and communication process of the business. A longitudinal study should be considered in future research.

Third, future research could be conducted in the area of leadership in the Fire Truck manufacturing industry. Different organisations have different leadership styles. The management and leadership styles in different businesses may be varied and lead to different outcomes.

Fourth, standards used in the assembling process are another area for future research. Different customers or clients required products to be assembled via different standards. Future research can be conducted by studying through standards used worldwide and applied with fire truck markets. However, one fire truck may use more than one standard to be applied in an assembling process. Future research maybe conducted to match with the needs of customers and clients in the future.

Finally, relationship management along the supply chain is an interesting area that needs to be explored further. The CCC Company has had a long relationship with its suppliers and customers or clients. Their relationship management with suppliers and clients could be the basis of a successful case story for other businesses in the same industry or other businesses in other industries.

7.9 Conclusion

The major contribution of this study is that it has led to a better understanding of the complexity in the organisation, how a business can be improved in the Fire Truck industry through enhancement of an IT system, how the introduction of IT can be effective for work in a company, and how that internal improvement can have beneficial effects both upstream and downstream in the company supply chain (Ashurst et al. 2012). The problems that were encountered in the business operations such as a miscommunication, retrieving information, and sharing information, were resolved and rectified, thus information was better shared and staff members were able to work in the organisation more efficiently (Abdul & Counsell 2012). This research concludes that a new IT infrastructure, implementation of relevant and strategic IT projects, training, and business policy led to business improvement internally and

this had a significant impact on the company's relationships with its supply chain suppliers and clients (Abdul & Counsell 2012).

The business improvement also impacted the supply chain of the Fire Truck business. Staff members at the CCC Company could work more efficiently and conveniently improving transactions between businesses such as making better communication flows up and down the supply chain. The role of a supply chain from a network perspective is to link different organisations that operate businesses or related businesses together, as well as processes within an organisation. In this study the use of IT enabled those linkages to improve, for example, the communication process, sharing information, and using IT to develop a standard of documents amongst staff members and the transmission and use of these up and down the supply chain (Abdul & Counsell 2012; Ashurst et al. 2012). They also enabled the relationships between the CCC Company and suppliers upstream to benefit from improved communication and this enabled the suppliers to get products and parts to the factory more efficiently and in better time.

The research showed that an IT adoption strategy can bring about improved efficiency and effectiveness of business operations to become more productive, thus targeting cost reduction, gaining better inventory management, developing appropriate time management, improving supply chain relationships and delivery from upstream suppliers and to downstream clients and enrich the competitiveness of the company, an effect that has applications to many businesses (Ashurst et al. 2012; Barratt 2004). The research also showed that information sharing and an IT adoption strategy can have significant impact on business operations; enable the company to achieve better performance, to gain higher productivity, and to achieve cost reductions. The IT used at the CCC Company provided a boost to supply chain management by automating information transfer in real-time and provided efficient means of data storage (Ashurst et al. 2012). The IT systems enabled better vertical integration through partnering with other firms that provided the same experience.

Theoretically the research has shown that by understanding the process of strategy creation and re-creation through using the strategy as practice concept, enabled more in depth understanding of how strategy itself could be an effective tool in resolving decisions iteratively continuously, rather than from one year to another. The research showed that IT adoption, as part of that strategy in practice, was affected by those expected factors already part of the literature (Abdul & Counsell 2012; Bresnahan et al. 2002; Yu et al. 2001).

However, this research has shown how context in the company and the importance of relationships in the supply chain made those 'factors' more relevant to the users.

Theoretically the interrelationships of information sharing, strategy as practice, supply change management and its network structures and processes, and ultimately improved business performance and the adoption of IT are indeed interdependent. The introduction of an IT use strategy in the company enhanced communication, the information sharing process and efficiency of work processes in the company (Alter 1999; Hodgkinson et al. 2006).

This research showed that strategy can be:

1. Iterative (Corbitt 1997, 2000) and evolutionary (Paroutis & Pettigrew 2007): there was no changed document or strategy product. The strategy was repeated continuously and changed incrementally; there was also improvement of the communication process that took place in each iteration;
2. Episodic (Hendry & Seidl 2003; Hodgkinson et al. 2006): the research showed that there were continual breaks in the strategy process such as from cycle 1 to cycle 2, then to cycle 3. These breaks were to deal with other issues. For example, from cycle 1 to cycle 2, the researcher suggested to the CEO to purchase hardware, software and an Internet system to implement at the company. This caused a delay and other business matters were focused on. From cycle 2 to cycle 3, the IT projects were implemented and then the researcher investigated and observed improvements within the cycle. Each period of observation coincided with an 'episode' in the strategy process in the company; and
3. Ritualistic (Bourque & Johnson 2008): the CEO initiated the rituals of IT changes. He trusted that IT could help facilitate the work process and enable staff members to work more efficiently. He talked with and encouraged staff and added to the company culture. This was presented to the staff as a means to make the company more secure business-wise. The CEO saw it as something 'we did everyday' and used it himself to assure the staff.

This research showed that IT implementation contributed to the business improvement through its positive impact. This research also contributes to deepen our understanding of the impact of IT use for business operations and should encourage business managers or business owners to implement IT as an enabler to improve their business operations.

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Appendix A

INTERVIEW DOCUMENTS

- A1 Plain Language Statement (English)**
- A2 Plain Language Statement (Thai Translation)**
- A3 Acceptance Letter to Conduct Research at CCC Company**
- A4 Interview Questions (English - Thai)**
- A5 Some Transcript Schedule**

A1 Plain Language Statement (English)

INVITATION TO PARTICIPATE IN A RESEARCH PROJECT

PROJECT INFORMATION STATEMENT

Project Title:

Using an IT strategy to improve company interaction with their supply chain in a Fire Truck Bodybuilding Business in Thailand

Investigator:

Mr. Pakpoom Dejsakulrit (PhD Candidate, RMIT University, pakpoom.dejsakulrit@ems.rmit.edu.au (+6681 4902345))

Dear Participant

You are invited to participate in a research project being conducted by RMIT University. This information sheet describes the project in straight forward language. Please read this sheet carefully and be confident that you understand its contents before deciding whether to participate. If you have any questions about the project, please contact the investigator.

This research is being conducted by Mr. Pakpoom Dejsakulrit from the Business Information Technology and Logistics at RMIT University. The aim of this research is to investigate How IT impacts on the business operations and work performance. The research findings would contribute to an understanding of work process and how IT impacts their work performance in the Fire Truck Business. This research project has been approved by RMIT Human Research Ethics Committee. The research is funded by RMIT University.

You have been selected as a participant in a Fire Truck manufacturing business:

This research will explore the following question:

- *How does the introduction of an IT-based work system impact on supply chain management both internally and externally in a Fire Truck Body Building business in Thailand?*

Approximately 30 staff members at the CCC Company, which includes senior managers in the Fire Truck manufacturing company will be approached to participate in this study for an interview. The interview will be digitally recorded, subject to your consent, to ensure the accuracy of the transcript of the interviews.

If you agree to participate in this interview, you will need to sign the attached informed consent form and return to the investigator prior to the start of the interview. The interview will consist of open-ended questions. It will last approximately one hour and will be digitally recorded, with your permission. Examples of the questions asked are:

- 1) What are general problems that you have seen at your organisation and how you have overcome these problems?

- 2) Has communication process been efficient? Why or why not? Please explain.
- 3) Does your organisation have any policy towards standard? How?
- 4) What are the future short term and long term policies about domain knowledge, IT, and standard?

Your responses to the questions will be captured via an audio recording of the interview, only with your permission. All information gathered during the course of this research, including your responses, will be securely stored for a period of 5 years in the School of Business Information Technology and Logistics, RMIT University and can only be accessed by the researcher. After five years, all data will be destroyed. The data collected will be analysed and results published in academic journals and conferences without including information that can potentially identify either you or your firm.

There are no foreseen risks associated with your participation in this research project as we seek only your comments and opinions regarding your understanding and practical experiences in your organisation. Additionally, you have one week to read through this plain language statement before undertaking the interview. This will give you time to evaluate whether or not you wish to participate in this study. There are no penalties if you decide not to participate. The benefits of participating in this research include an understanding work process, important of IT, and how IT impacts on work process. In order to do so, I will send you an electronic copy after completion of the project.

Any information that you provide can be disclosed only if (1) it is to protect you or others from harm, (2) a court order is produced, or (3) you provide the researcher with written permission.

Your participation in this research is voluntary. As a participant, you have the right (a) to request digitally recording cease at any stage during the interview (b) to withdraw from the interview at any stage or at any point of time, (c) to have any unprocessed data withdrawn and destroyed, provided it can be reliably identified, and provided that so doing does not increase the risk for the participant; and have any questions answered at any time.

If you have any questions or enquiries at any time about the interview or procedures in your participation of the project, you can contact Pakpoom Dejsakulrit by email: at pakpoom.dejsakulrit@ems.rmit.edu.au, and Professor Brian Corbitt by email: at brian.corbitt@rmit.edu.au. Otherwise, you could directly contact the secretary, Portfolio Human Research Ethics Sub-committee, Business Portfolio, RMIT on telephone: (61 3) 992 5594 or email: rdu@rmit.edu.au.

Sincerely yours,

Pakpoom Dejsakulrit

A2 Plain language statement (Thai)

ข้อชี้แจงทั่วไปเกี่ยวกับโครงการวิจัย

หัวข้อวิจัย กลยุทธ์การใช้ไอที เพื่อพัฒนาปฏิสัมพันธ์ระหว่างธุรกิจในช่วงโซ่อุปทานของธุรกิจการต่อระดับเพลิงในประเทศไทย

สถานที่วิจัย School of Business Information Technology and Logistics, RMIT University, Australia

บุคลากร นายภาคภูมิ เดชสกุลฤทธิ์ (นักศึกษาระดับปริญญาเอก ผู้ดำเนินการวิจัย)
Pakpoom Dejsakulrit E-mail: pakpoom.dejsakulrit@rmit.edu.au

Tel: +66 81490 2345

Professor Brian Corbitt อาจารย์ที่ปรึกษา

E-mail: brian.corbitt@rmit.edu.au

Tel: +61 3 9925 0105

โครงการวิจัย เป็นไปตามที่กำหนดในหลักสูตร Doctor of Philosophy ซึ่งได้รับความเห็นชอบให้ดำเนินการวิจัยได้ และแบบสอบถามได้รับการรับรองให้ใช้ได้ จากคณะกรรมการจริยธรรมการวิจัยที่เกี่ยวข้องกับมนุษย์ (Human Research Ethics Committee—HREC) ณ สำนักงาน RMIT



Business Portfolio
(School of Business Information Technology)

จดหมายเชิญเพื่อเข้าร่วมการสัมภาษณ์และรายละเอียดของโครงการวิจัย

ชื่อโครงการ

Managing quality issue along a complex supply chain management in fire truck bodybuilding business: A Thai case study

ผู้ศึกษาวิจัย

นายภาคภูมิ เดชสกุลฤทธิ์ (PhD candidate, e74325@ems.rmit.edu.au, (+662) 883 2880
Prof. Brian Corbitt (Project Supervisor: Head, School of Business Information Technology, RMIT University, brian.corbitt@rmit.edu.au, 9925 0105)
Dr. Konrad Petzinski (Second Supervisor: Senior Lecturer, School of Business Information Technology, RMIT University, konrad.petzinski@rmit.edu.au, 9925 0136)
Dr. Siddhi Pittayachawan (Third Supervisor: Senior Lecturer, School of Business Information Technology, RMIT University, siddhi.pittayachawan@rmit.edu.au)

เรียน

มหาวิทยาลัย RMIT มีความยินดีเรียนเชิญท่านเข้าร่วมโครงการศึกษาวิจัยของมหาวิทยาลัย เอกสารนี้เป็นเอกสารประกอบคำชี้แจงในการเข้าร่วมโครงการฯ ขอให้ท่านอ่านเอกสารนี้โดยละเอียดเพื่อความมั่นใจว่าท่านเข้าใจในเนื้อหาที่ท่านตัดสินใจเข้าร่วมโครงการฯ หากท่านมีข้อสงสัยประการใดเกี่ยวกับโครงการศึกษานี้ กรุณาติดต่อกับผู้ศึกษาวิจัยโดยตรง

การศึกษานี้มีเป้าหมายเพื่อชี้ให้เห็นถึงปัจจัยที่มีผลกระทบต่อการจัดการเชิงคุณภาพในห่วงโซ่อุปทาน (Supply Chain) ในธุรกิจรถดับเพลิงในประเทศไทย และการศึกษานี้มุ่งประเด็นในการแยกประเด็นศึกษาไปยังผู้มีส่วนเกี่ยวข้องในห่วงโซ่อุปทาน (Supply Chain) ที่ได้มีการนำเอาระบบ IT มาใช้ ศึกษาถึงกระบวนการในการยอมรับการนำเอา IT เข้ามาใช้ในอุตสาหกรรมรถดับเพลิงและผลประโยชน์ที่ได้รับ ผลที่ได้จากการศึกษาจะช่วยทำให้เกิดความเข้าใจในธุรกิจการประกอบรถดับเพลิงในประเทศไทย และเข้าใจถึงปัจจัยที่จะนำไปสู่การปฏิบัติได้สำเร็จ

การศึกษาโครงการวิจัยฯ นี้ ได้รับการอนุมัติจากคณะกรรมการศึกษาระดับมหาวิทยาลัยที่เกี่ยวข้องกับคณาจารย์ของมหาวิทยาลัย RMIT และได้รับงบประมาณการศึกษาจากมหาวิทยาลัยฯ ท่านได้รับการคัดสรรให้เข้าร่วมการศึกษา โดยพิจารณาจาก

ประสพการณ์การทำงานของท่านในอุตสาหกรรมการประกอบระดับเพลิงในประเทศไทย โดยงานวิจัยนี้จะให้ความกระจ่างในการศึกษาจากคำถามการวิจัยว่า

“IT มีผลกระทบต่อการจัดการห่วงโซ่อุปทานในธุรกิจการประกอบระดับเพลิงในประเทศไทยอย่างไร ที่จะนำไปสู่การประกอบธุรกิจที่มีคุณภาพ”

จำนวนผู้เข้าร่วมการสัมภาษณ์ทั้งสิ้น 28 ท่าน ประกอบด้วย เจ้าของธุรกิจ ผู้จัดการ และพนักงานจากฝ่ายขายและฝ่ายจัดซื้อ รวม 20 ท่าน นอกเหนือจากนั้นจะมีผู้ให้สัมภาษณ์จากบริษัทผู้ผลิตวัตถุดิบอีก 4 ท่าน และจากส่วนของลูกค้าของบริษัทอีก 4 ท่าน การสัมภาษณ์จะมีการถูกบันทึกไว้เพื่อความสะดวกและความน่าเชื่อถือในกระบวนการสัมภาษณ์และจะได้รับการอนุญาตจากผู้ให้สัมภาษณ์ก่อนมีการบันทึกเสียง

หากท่านยินดีตกลงเข้าร่วมการศึกษา ท่านจะต้องลงนามยินยอมในแบบฟอร์มที่แนบมาด้วยนี้ภายในระยะเวลา 1 อาทิตย์ ก่อนมีการให้สัมภาษณ์ คำถามในการศึกษาเป็นแบบคำถามปลายเปิด ซึ่งผู้ตอบสามารถแสดงความคิดเห็นได้อย่างเต็มที่ โดย การสัมภาษณ์ จะใช้ระยะเวลาโดยประมาณ 45 – 60 นาที และมีการบันทึกเสียงโดยความยินยอมจากท่าน ตัวอย่างของคำถามคือ

- 1) ปัญหาทั่วไปที่ท่านพบในองค์กรคืออะไร และท่านสามารถแก้ไขปัญหานั้นได้อย่างไรบ้าง
- 2) กระบวนการสื่อสารในองค์กรมีประสิทธิภาพมากน้อยอย่างไรให้อธิบาย
- 3) นโยบายระยะสั้นและระยะยาวเกี่ยวกับองค์ความรู้ IT และ มาตรฐานของบริษัทท่านมีอะไรบ้าง
- 4) นโยบายทั้งระยะสั้นและระยะยาวในอนาคตเกี่ยวกับองค์ความรู้ IT และ มาตรฐานของบริษัทท่านมีอะไรบ้าง

คำตอบของท่านจะถูกบันทึกโดยเครื่องบันทึกเสียงในขณะที่สัมภาษณ์โดยความยินยอมของท่าน ข้อมูลจากการศึกษาวิจัยนี้รวมทั้งข้อมูลที่ได้รับจากท่านจะถูกเก็บรักษาไว้เป็นระยะเวลา 5 ปีในคณะธุรกิจเทคโนโลยีสารสนเทศ ของมหาวิทยาลัย RMIT และข้อมูลนี้สามารถเรียกดูได้เพียงแก่ผู้ศึกษาวิจัยเท่านั้น ข้อมูลเหล่านี้จะถูกทำลาย ภายหลังจากการเก็บรักษาข้อมูลนี้ไว้เป็นระยะเวลา 5 ปี ข้อมูลจะถูกนำไปวิเคราะห์และผลจากการศึกษาจะถูกนำไปเผยแพร่ในรูปแบบของบทความทางวิชาการและการสัมมนาทางวิชาการซึ่งข้อมูลจะไม่มีการบ่งบอกแหล่งที่มาของข้อมูลใด ๆ ทั้งสิ้น

ท่านจะไม่ได้รับความเสียหายใด ๆ ในการเข้าร่วมในโครงการศึกษาวิจัยนี้ทั้งสิ้น เนื่องจากผู้วิจัยต้องการเพียงความคิดเห็นและข้อเสนอแนะของท่าน จากความเข้าใจและจากประสบการณ์ตรงของท่าน นอกเหนือไปจากนั้น ท่านมีเวลาหนึ่งอาทิตย์ในการอ่านจดหมายเชิญและรายละเอียดของโครงการศึกษาวิจัยนี้ ท่านจะมีเวลาในการตอบตกลงเข้าร่วมโครงการศึกษาวิจัยนี้ ท่านจะไม่เกิดข้อเสียหายใดๆ ขึ้นหากท่านตัดสินใจที่ไม่ขอเข้าร่วมโครงการศึกษานี้เช่นเดียวกัน ผลประโยชน์ที่ท่านจะได้รับในการศึกษานี้ประกอบด้วยการสร้างความเข้าใจในด้านมาตรฐานและ IT ที่จะนำไปสู่คุณภาพการจัดการของห่วงโซ่อุปทาน ท่านสามารถที่จะอ่านบทสรุปของผลที่ได้รับจากการศึกษาโดยการขอสำเนาภายหลังจากที่โครงการศึกษาวิจัยนี้สิ้นสุดลงได้

ข้อมูลที่ท่านให้จากการสัมภาษณ์จะสามารถนำมาเปิดเผยได้ในกรณี 1) เพื่อปกป้องท่านหรือผู้อื่นจากความเสียหาย 2) คำสั่งศาล หรือ 3) ท่านเขียนให้คำยินยอมแก่ผู้ศึกษาวิจัย

การเข้าร่วมในโครงการศึกษาวิจัยเป็นไปด้วยความเต็มใจของท่าน ท่านมีสิทธิในการ ก) ขอให้มีการหยุดบันทึกได้ทุกขณะ ในระหว่างการสัมภาษณ์ ข) เพิกถอนการสัมภาษณ์ได้ทุกขณะเวลา ค) ให้มีการถอนการนำข้อมูลไปใช้และให้มีการทำลาย ข้อมูล โดยมีความเชื่อมั่นว่าท่านจะไม่ได้รับความเสียหายใดๆเกิดขึ้นและท่านสามารถที่จะสอบถามได้ตลอดเวลา

หากท่านมีข้อสงสัยประการใดหรือมีคำถามที่เกี่ยวกับการสัมภาษณ์ในการเข้าร่วมโครงการศึกษาวิจัยฯ ท่านสามารถติดต่อผู้ ทำการศึกษาวิจัย นายภาคภูมิ เดชสกุลฤทธิ์ ได้โดยอีเมลล์ที่ pakpoom.dejsakulrit@ems.rmit.edu.au, เบอร์โทรศัพท์ 081 490 2345 หรือติดต่อได้โดยตรงที่ the secretary, Portfolio Human Research Ethics Sub-committee, Business Portfolio, RMIT on telephone: (61 3) 992 5594 or email: rdu@rmit.edu.au.

ขอแสดงความนับถือ

ภาคภูมิ เดชสกุลฤทธิ์
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หากมีข้อร้องเรียนประการใดเกี่ยวกับการศึกษาวิจัยในโครงการฯนี้ ท่านสามารถติดต่อโดยตรงที่ the Secretary, Business Human Research Ethics Sub Committee, Business Portfolio RMIT, GPO Box 2476V, Melbourne, 3001. The telephone number is (03) 9925 5594 or email address rdu@rmit.edu.au. รายละเอียดของคำร้องและกระบวนการร้องเรียนสามารถศึกษาได้จาก http://www.rmit.edu.au/rd/hrec_complaints

A3 Acceptance Letter to Conduct Research at the CCC Company

May 26, 2009

Dear Mr. Pakpoom Dejsakulrit:

I am delighted to support your PhD study, and hereby authorize our employees to participate your research interviews under the topic “Managing Quality Issue along a Complex Supply Chain Management in Fire Truck Bodybuilding Business: A Thai Case Study” as requested.

In the case that you may wish to contact our suppliers and some of our customers, I will be very happy to arrange you to meet with them for additional information should you inquire.

I wish you a very success in your study and future.

Sincerely yours,

(.....)

Manager

A4 Interview questions (English - Thai)

In Organisation

In Organisation	In Organisation
<ol style="list-style-type: none"> 1. Owners or Managers 2. Employees (involved) 	<ol style="list-style-type: none"> 1. Owners or Managers 2. Employees (involved)
<ol style="list-style-type: none"> 1. Please you please provide general information about your organisation. 2. What are general problems that you have seen at your organisation and how you have overcome these problems? 3. How does your organisation approach your customers? 4. How does your organisation approach the suppliers? 5. How does your organisation keep (long) relationship with them? 6. Is there any party involved when approaching the customers? 7. Has communication process been efficient? Why or why not? Please explain. 	<ol style="list-style-type: none"> 1. ขอรบกวนข้อมูลเบื้องต้นขององค์กรท่าน 2. ปัญหาโดยทั่วไปที่พบเจอในองค์กร องค์กรของท่านมีอะไรบ้าง และมีแนวทางในการแก้ไขปัญหาอย่างไร 3. องค์กรของท่านติดต่อลูกค้าอย่างไร 4. องค์กรของท่านติดต่อผู้ผลิตวัตถุดิบอย่างไร 5. องค์กรของท่านมีวิธีการใดที่รักษาความสัมพันธ์ระยะยาวกับลูกค้าหรือผู้ผลิตวัตถุดิบ 6. มีผู้มีส่วนเกี่ยวข้องใดประสานงานช่วยเหลือให้ท่านติดต่อกับลูกค้าหรือผู้ผลิตวัตถุดิบ 7. การติดต่อสื่อสารกับลูกค้าของท่านเป็นอย่างไร มีประสิทธิภาพเป็นอย่างไร กรุณาอธิบาย

<ol style="list-style-type: none"> 1. Does your organisation have any policy towards standard? How? 2. Does your organisation have any policy towards utilisation of IT? How? 3. Does your organisation have any policy towards knowledge domain? Please clarify. 4. What are the future short term and long term policies about domain knowledge, IT, and standard? 	<ol style="list-style-type: none"> 1. องค์กรของท่านมีนโยบายใดที่เกี่ยวข้องกับมาตรฐานหรือไม่ 2. องค์กรของท่านมีนโยบายใดที่เกี่ยวข้องกับการนำเอาระบบเทคโนโลยีข้อมูลข่าวสาร (IT) มาใช้หรือไม่ มีอะไรบ้าง กรุณาอธิบาย 3. องค์กรของท่านมีนโยบายเกี่ยวกับองค์ความรู้ขององค์กรที่ต้องมีการจัดการหรือไม่ มีอะไรบ้าง กรุณาอธิบาย 4. ท่านมีนโยบายระยะสั้นหรือระยะยาวอะไรบ้างที่เกี่ยวกับองค์ความรู้ขององค์กร ระบบเทคโนโลยีข้อมูลข่าวสาร และมาตรฐาน ในอนาคต
<ol style="list-style-type: none"> 1. How does your organisation organise knowledge domain? 2. How do the employees in your organisation communicate and share knowledge with stakeholders (within organisation/ customers/ suppliers)? How? Please explain. 3. How does your organisation keep the filing about work related, products, customers, and etc.? 4. Do you think that they are efficient? Why or why not? 	<ol style="list-style-type: none"> 1. องค์กรของท่านมีการถ่ายทอดองค์ความรู้ภายในองค์กรอย่างไรบ้าง 2. บุคลากรในองค์กรของท่านทราบข้อมูลหรือมีความรู้ทุกด้านเช่นเดียวกับท่านหรือไม่ ด้านใดบ้างที่เหมือนกัน ด้านใดที่ต่างกัน 3. กรุณาอธิบายถึงวิธีการที่ องค์กรของท่าน มีการจัดเก็บเอกสารต่าง ๆ ที่เกี่ยวข้องกับการทำงาน สินค้า และเอกสารอื่น ๆ ที่เกี่ยวข้อง เช่นไร 4. ท่านคิดว่าการแบ่งปันข้อมูลหรือกระบวนการใช้ข้อมูลรวมในองค์กรของ

<p>Please explain.</p> <p>5. How does your organisation plan the knowledge domain for your organisation?</p> <p>6. Do you have any suggestion for improvement?</p>	<p>ท่านมีประสิทธิภาพหรือไม่ เช่นไร กรุณาอธิบาย</p> <p>5. ท่านวางแผนเกี่ยวกับการใช้ข้อมูลร่วมในองค์กรของท่านอย่างไร</p> <p>6. ท่านมีแนวทางในการพัฒนาให้ประสิทธิภาพการใช้ข้อมูลร่วมในองค์กรดีขึ้นหรือไม่</p>
<p>1. How many types of standards have you recognised? What are they?</p> <p>2. Do you realise about the standard being utilised at your organisation? What are they?</p> <p>3. How many types of standard have been utilising at your organisation? What are they? On what purposes? Toward products or organisation?</p> <p>4. Do you think that the adopted standard(s) is/are sufficient? Why or why not? Please explain.</p> <p>5. Does your organisation plan to improve the standard in the future? How?</p>	<p>1. ท่านรู้จักมาตรฐานกี่ประเภท มีอะไรบ้าง</p> <p>2. องค์กรของท่านมีการใช้มาตรฐานที่ท่านกล่าวมานี้ทั้งหมดหรือไม่ มีมาตรฐานไหนบ้างที่องค์กรของท่านใช้อยู่เพื่อเป็นการควบคุมมาตรฐานสินค้าที่ท่านมีการเลือกซื้อ</p> <p>3. มาตรฐานใดที่ท่านใช้หรือกำหนดให้บริษัทต้องมีต่อสินค้าที่ท่านซื้อ มีอะไรบ้าง</p> <p>4. ท่านคิดว่ามาตรฐานที่ท่านเลือกใช้ต่อสินค้าที่ท่านซื้อมีความเพียงพอหรือไม่ กรุณาอธิบาย</p> <p>5. ท่านมีการวางแผนที่จะเพิ่มระดับมาตรฐานที่มีต่อสินค้าที่ท่านซื้อหรือไม่ อย่างไร กรุณาอธิบาย</p>
<p>1. Does IT system in your organisation supports all</p>	<p>1. ระบบเทคโนโลยีข้อมูลข่าวสารใน</p>

<p>works within your organisation? How? Please explain.</p> <p>2. How do you contact with customers/suppliers?</p> <p>3. Are the communication processes you have utilised convenient? Why or why not?</p> <p>4. Is there any communication process required for improvement? Why or why not please explain.</p> <p>5. Have the IT facilities or equipments used in your organisation been supportive and useful? Please explain.</p> <p>6. Have the IT applications used at your organisation been appropriate? Please explain.</p> <p>7. What are short-term and long-term plans for the utilisation of IT. Please explain in.</p>	<p>องค์กรของท่านสนับสนุนการทำงานในองค์กรของท่านมากน้อยเพียงใด กรุณาอธิบาย</p> <p>2. ท่านมีการติดต่อสื่อสารกับบริษัทที่ท่านซื้อสินค้า เช่นใด</p> <p>3. กระบวนการติดต่อสื่อสารที่ท่านนำมาใช้ในองค์กรมีความสะดวกสบายเพียงใด กรุณาอธิบาย</p> <p>4. มีกระบวนการติดต่อสื่อสารใดในองค์กรของท่านที่ท่านคิดว่าต้องมีการพัฒนาให้ดีขึ้นเช่นใด กรุณาอธิบาย</p> <p>5. อุปกรณ์เทคโนโลยีข้อมูลข่าวสารที่นำมาใช้ในองค์กรของท่านมีความสะดวกมากน้อยเช่นไร มีความเหมาะสมหรือไม่ กรุณาอธิบาย</p> <p>6. การนำกระบวนการเทคโนโลยีข้อมูลข่าวสารที่รวมไปจนถึงซอฟต์แวร์ต่าง ๆ ของบริษัทท่านเหมาะสมกับการทำงานหรือไม่ อย่างไร กรุณาอธิบาย</p> <p>7. การวางแผนระยะสั้นและระยะยาวต่อระบบเทคโนโลยีข้อมูลข่าวสารของท่านเป็นเช่นไร กรุณาอธิบาย</p>
<p>1. Please explain in terms of performance (management and production area).</p> <p>2. Do you think that your</p>	<p>1. กรุณาอธิบายเกี่ยวกับคำจำกัดความของผลลัพธ์ในการทำงาน ในแง่ของการจัดการ และการนำเอาผลิตภัณฑ์ไปใช้ใน</p>

<p>organisation have achieved at an optimum level of performance? Why or why not? Please explain.</p>	<p>การทำงาน</p> <p>2. ท่านคิดว่าสินค้าหรือผลิตภัณฑ์ที่ท่านจัดซื้อ ช่วยให้ห้องค์กรของท่านปฏิบัติงานได้อย่างเต็มประสิทธิภาพการทำงานหรือไม่ อย่างไร กรุณาอธิบาย</p>
<p>1. Are there any other related issues to discuss? What are they?</p> <p>2. Why do you think that they are important to discuss? Please explain.</p>	<p>1. ท่านมีข้อเสนอแนะหรือประเด็นอื่นที่สำคัญที่จะแนะนำหรือไม่ อย่างไร</p> <p>2. ทำไมท่านถึงคิดว่ามันสำคัญที่ต้องกล่าวถึง กรุณาอธิบาย</p>

A5 Some Transcript Schedule

Some of Transcript Schedule				
NO.	Date	Name	Department	Remarks
1	Jul-09	Rat	Sales (Domestics)	Completed
2	Jul-09	Nik	Procurement	Completed
3	Jul-09	Nid	Finance	Completed
4	Aug-09	Phon	Sales (Domestics)	Completed
5	Jul-09	ST	Mgnt	Completed
6	Aug-09	Bee	Procurement	Completed
7	Jul-09	Ple	Sales (Domestics)	Completed
8	Sep-09	Joop	Sales (Domestics)	Completed
9	Sep-09	Oh	Sales (Domestics)	Completed
10	Aug-09	Wi	Sales (Inter.)	Completed
11	Jul-09	Nat	IT	Completed
12	Jul-09	Too	Sales (Domestics)	Completed
13	Jul-09	Nik	Sales (Inter.)	Completed
14	Aug-09	Nid	Finance	Completed
15	Aug-09	Joop	Sales (Domestics)	Completed
16	Aug-09	Rat	Sales (Domestics)	Completed
17	Aug-09	Too	Sales (Domestics)	Completed
18	Aug-09	Oh	Sales (Domestics)	Completed
19	Aug-09	Nat	IT	Completed
20	Aug-09	Bee	Procurement	Completed
21	Aug-09	Joop	Procurement	Completed
22	Jul-09	ST	Mgnt	Completed
23	Aug-09	Phon	Sales (Domestics)	Completed
24	Sep-09	Phon	Sales (Domestics)	Completed

25	Sep-09	Wi	Sales (Domestics)	Completed
26	Aug-09	Nat	IT	Completed
27	Sep-09	Bee	Procurement	Completed
28	Sep-09	Joop	Procurement	Completed
29	Oct-09	Too	Sales (Domestics)	Completed
30	Nov-09	Ple	Sales (Domestics)	Completed
31	Dec-09	Nid	Finance	Completed
32	Dec-10	Oh	Sales (Domestics)	Completed
33	Nov-10	Nik	Procurement	Completed
34	Jan-10	Rat	Sales (Domestics)	Completed
35	Jan-10	TN	Mgmt	Completed
36	Jan-10	Joop	Sales (Domestics)	Completed

Appendix B

EXAMPLE OF TRANSCRIPT AND TRANSLATION

- B1** Interview (in Thai)
- B2** Interview (in English)

B1 Interview (Thai)

ชื่อ	คุณ ST
วันที่	17 June 2009
เวลา	14.00 pm

ถาม : สวัสดีครับ วันนี้ผม เอ่อ ภาคภูมิ เดชสกุลฤทธิ์ นะครับ ก็จะมา เอ่อ สัมภาษณ์คุณ ST นะครับ ก็ซึ่งจะใช้เวลาประมาณ 30 – 40 นาที หรืออาจจะยาวกว่าเป็นชั่วโมงก็ได้ แล้วแต่คุณ ST นะครับ ลักษณะคำถาม ก็จะถามเกี่ยวกับพวกนโยบายต่าง ๆ เช่น นโยบายในโดยทั่วไปนะครับ และก็ข้อมูลโดยทั่วไปนะครับ และก็เกี่ยวกับนโยบายทางด้านไอที การจัดการองค์ความรู้และมาตรฐานนะครับ ก็เดี๋ยวจะลองถามเลยแล้วกันนะครับ อยากให้คุณ ST เนี่ยได้อธิบายอำนาจหน้าที่ความรับผิดชอบในองค์กร ทั้งที่ต้องเอ่อเป็นหน้าที่หลักจริง ๆ และก็ไปช่วยงานจริง ๆ เพราะไปได้ยินมาว่าคุณอุตุนิยมไปช่วยแผนกอื่น ๆ ด้วยนะครับ

ตอบ : ขอบข่ายหน้าที่หลักของผมก็คือดูแลเรื่องเกี่ยวกับ เอ่อ ภารกิจของบริษัทในส่วนของต่างประเทศ

ถาม : ครับ

ตอบ : อะไรที่อยู่ต่างประเทศ เป็นส่วนของผมทำ ไม่ว่าจะซื้อหรือจะขายสินค้าต่างประเทศ

ถาม : ครับ

ตอบ : ส่วนปลีกย่อยอื่น ๆ ก็จะมีบ้าง เมื่อมีเวลาว่าง ก็จะไปช่วยทางผลิตบ้าง ไปช่วยทางออกแบบบ้าง

ถาม : ครับ

ตอบ : ไปช่วยด้านในโรงงานเกิดขึ้นเร็วบ้าง ช่วยงานผลิตไฟเบอร์บ้าง แล้วแต่จังหวะที่ผมพอจะมีเวลาให้ไปได้

ถาม : ครับ ชื่อตำแหน่งปัจจุบันจริงๆคืออะไรนะครับ

ตอบ : เป็น general manager แต่ภาษาไทยไม่รู้

ถาม : เป็น general manager

ตอบ : เป็น general manager ของแผนก ของสายงานการค้าระหว่างประเทศ

ถาม : พูดถึงสายงานหรือว่าโครงสร้างของสายงานที่คุณ ST เอ่อ ดูแลอยู่นะ ตอนนี้อยู่สายการบังคับบัญชาหรือโครงสร้างออร์กาไนซ์ เฉพาะฝ่ายของตนเองเนี่ยชัดเจนมากน้อยขนาดไหนครับ

ตอบ : ของผมค่อนข้างชัด

ถาม : ครับ

ตอบ : ในเรื่องที่ว่าสายงานการค้าระหว่างประเทศเนี่ย เราจะมี 3 ฝ่ายใหญ่ๆ ที่นี้ ฝ่ายที่ 1 คือฝ่ายจัดซื้อต่างประเทศ

- ถาม : ครับ
- ตอบ : ฝ่ายที่ 2 ก็คือฝ่ายขายต่างประเทศ
- ถาม : ครับ
- ตอบ : และฝ่ายที่ 3 เนี่ยที่กำลังจะพัฒนาขึ้นมาคือ ฝ่ายพัฒนาธุรกิจของบริษัท
- ถาม : ครับ
- ตอบ : หรือจะเรียกอีกมุมก็คือ เอาสองสิ่ง คือ หาของ หาของมาฝ่ายจัดหา
- ถาม : แต่ออฟ
- ตอบ : หาใหม่ ๆ มาขาย
- ถาม : แต่ออฟทอปปีงในที่นี่ก็คือพูดถึงเอ่อฝ่ายต่างประเทศ ออฟทอปปีงในที่นี่คือออฟทอปปีง เฉพาะต่างประเทศ
- ตอบ : เฉพาะลูกค้าต่างประเทศ
- ถาม : ครับ ๆ ของบริษัท เอ่อ ที่คุณ ST ได้ทำงานด้วยเนี่ย นะครับ เอ่อ เวลาซื้อกับขายไม่ว่าในประเทศหรือต่างประเทศเนี่ยมันอยู่หน่วยงานเดียวกันไหมครับ เพราะเห็นที่อื่น ๆ เขาจะอยู่ในฝ่ายเดียวกัน
- ตอบ : จริงๆแล้วมัน มันไม่เชิงหน่วยงานเดียวกันนะครับ ที่ผมมองนะเพียงแต่ว่าตอนนี้ ในเรื่ององค์กรเนื่องจากเราต้องปรับเรา ๆ เราคิดว่าองค์กรเราคงจัดระเบียบแบบแผนตามความสะดวกแล้วงานมันเดิน ได้ดี
- ถาม : ครับ
- ตอบ : ซึ่งโดยทั่วไปเท่าที่ผมเคยสัมผัสมาซื้อกับขายเนี่ยเขาจะแยกกัน
- ถาม : ครับ ๆ
- ตอบ : เขาจะแยกกัน แต่ถามว่าเอามารวมกันที่นี้มันดีไหม สำหรับผมมันดีเพราะดูแลง่ายหน่อย
- ถาม : ครับ
- ตอบ : แล้วในการขายสินค้า ด้านการซื้อสินค้าตัวผมเองก็จะมี เขาเรียกว่า ความยืดหยุ่นในการทำงานและการจัดเตรียมข้อมูลค่อนข้างจะเร็วกว่า
- ถาม : ครับ
- ตอบ : เพราะเรารู้ทั้งสองฝ่ายเลย
- ถาม : ใช่ครับ ทั้งซื้อทั้งขาย
- ตอบ : ใช่
- ถาม : แต่อีกหน่อยถ้าเกิดได้คู่ ซื้อในประเทศกับขายในประเทศด้วยร่วมกันเลยมันจะดีกว่าไหมครับ มันจะดูภาพรวมได้ดีกว่าไหมครับ
- ตอบ : ถ้ามีศักยภาพถึงขนาดนั้นมันก็ดีหรืออกแต่ว่ามันต้องใช้ประสบการณ์อีกเยอะเลย เนื่องจากว่ากลุ่มลูกค้า การซื้อไม่ใช่ปัญหาหลัก

ถาม : ครับ

ตอบ : แต่การขายอาจจะเป็นปัญหาคิดหนึ่ง เนื่องจากว่าวิธีการขายของเราต่างประเทศมันจะเป็นวิธีผสมไม่เคขายเลยเนี่ย มันจะไม่เหมือนกัน เนื่องจากว่าสินค้าที่เราขายเนี่ยมันไม่ใช่สินค้า เอ่อ ที่เขาเรียกว่าเป็นคอนเจริงโปรดักหรือเจนเนอริงโปรดัก ที่จะต้องมีการบริหารจัดการ มีการวิ่งเต้นในหลายสิ่งหลายอย่างซึ่งตรงเนี่ยจำเป็นจะต้องใช้ผู้ที่ชำนาญการ

ถาม : งั้นตกลงคุณอู๊ดก็ดูแลเรื่อง เอ่อ ซื่อกับขายโดยเฉพาะในต่างประเทศนะครับแล้วก็ช่วยงานอื่นๆที่ช่วยได้เกี่ยวกับด้านการผลิตบ้าง งั้นมาคุยเรื่องวิธีการขายหรือนโยบายการขายของต่างประเทศดีกว่าครับ ว่ามีนโยบาย เอ่อ ทางบริษัทเนี่ยเฉพาะฝ่ายของคุณ STเนี่ยมีนโยบายทางการขายระยะสั้นคือ 1 ปีหรือมากกว่า 3 ถึง 5 ปีเนี่ยอย่างไรบ้างครับ หรือมีการกำหนดหรือยังครับ

ตอบ : ถ้าพูดถึงนโยบายในการขาย ถ้าพูดถึงนโยบายในเชิงการอัปโพลสลูกค้าก่อน

ถาม : ครับ

ตอบ : ในการอัปโพลสถึงผู้ใช้จริงๆ หรือผู้ซื้อจริงๆ เนี่ย

ถาม : ครับ

ตอบ : กว่า ๆ ๆ 90 เปอร์เซนต์ก็ว่าได้ ในผลงานการขายนี้ เราไม่ได้ไปหาลูกค้าโดยตรง

ถาม : ครับ

ตอบ : เรามีที่ระลึกว่าเป็นตัวแทนจำหน่าย

ถาม : ครับ

ตอบ : ในแต่ละประเทศที่เราจำหน่ายอยู่

ถาม : ครับ

ตอบ : แต่ว่าเมื่อมีตัวแทนจำหน่ายแล้ว พอเริ่มการขายได้หรือเริ่มจะตัดสินใจได้ มันก็ขึ้นอยู่กับว่างานนี้ลูกค้าซื้อต้องการซื้อโดยตรงจากผู้ผลิตหรือผู้ซื้อต้องการซื้อกับตัวแทนจำหน่ายก็ได้ ยกตัวอย่าง ยกตัวอย่างเช่นบังคลาเทศ เราก็ติดต่อกับลูกค้าโดยตรงเหมือนกัน

ถาม : ครับ ๆ

ตอบ : บางประเทศ เราจะต้องใช้ผู้ค้าเรานั้นคือ ITC ผู้ซึ่งเราซื้อคัตซี อีซูซุจากญี่ปุ่นจากเขาเป็นนายหน้าเซ็นสัญญาให้เรา

ถาม : ครับ

ตอบ : เพื่อที่เราจะได้ เอ่อ เงินจากญี่ปุ่นซึ่งการเงินการธนาคารไทยยอมรับการจ่ายเงินของญี่ปุ่นมากกว่าการยอมรับเงินจากบังคลาเทศมา

ถาม : ครับ ก็คือจะมี ITC นะครับเป็นบริษัทคล้ายๆ กับบริษัทนายหน้าหรือส่วนบริษัทกลาง

ตอบ : พาร์ทเนอร์ เราเรียกพาร์ทเนอร์

- ถาม : พาร์ทเนอร์ดีกว่า ได้ทำงานร่วมกับ ITC เอ่อ ในทุกประเทศเลยไหมครับ หรือว่ายังไงครับ
- ตอบ : ไม่นะครับ ถ้า ITC จริงๆ เนี่ยพูดได้ว่า ธุรกิจการส่งออกของบริษัทเนี่ย เริ่มจากการร่วมมือของเรากับ ITC
- ถาม : ครับ
- ตอบ : โดยสมัยนั้นประมาณ 11 ปีที่แล้วเนี่ยเป็นการร่วมมือของสามฝ่ายด้วยกัน ของเคสร่วมกับ ITC และบริษัทท้องถิ่น คือบริษัท BIN โดยมีมีสเตอร์ Mabul เจ้าของเป็นผู้ร่วมสวัสดิการด้วยกัน
- ถาม : ครับๆ
- ตอบ : นอกจากนั้นแล้ว พอ ITC ได้ประสบผลสำเร็จนี้ ทำไมเราไม่ทำงานกับเขาเรื่อยๆเนื่องจากในอดีตเนี่ยเรามีบริษัทเทรดดิ้งของญี่ปุ่นอยู่ 2 บริษัทหลัก ๆ 1 ITC 2 คือ KMKC
- ถาม : ครับ
- ตอบ : ที่ผ่านมามาในอดีต เอ่อ 10 ปีเนี่ย เราค่อนข้างมีความสำเร็จลงกับ KMKC มากกว่า
- ถาม : ครับ
- ตอบ : เนื่องจากว่าบริษัท KMKC เนี่ยตัวแทนในประเทศไทยให้การบริการ ให้ความรู้ ให้โอกาสธุรกิจเรามากกว่า
- ถาม : ครับ
- ตอบ : แต่เนื่องจากปัจจุบันนี้ KMKC ก็ล้มสลายไปแล้ว
- ถาม : ครับ
- ตอบ : เป็นส่วนของToyo T เป็นส่วนหนึ่งของบริษัทแม่คือToyo
- ถาม : ครับ
- ตอบ : อินเตอร์ชู่เองก็อยากร่วมมือกับเราเพราะตอนนี้เขาก็ร่วมมือโดยดึงธุรกิจของประเทศอื่นมาเสนอให้เรา
- ถาม : ครับ
- ตอบ : ซึ่งมันก็คือในขั้นเริ่มต้นยังไม่ประสบความสำเร็จ ถึงจุดนั้น
- ถาม : ครับ มี ๆ มากน้อยขนาดไหนที่เรา เอ่อ ไม่ได้ผ่านพาร์ทเนอร์ตรงนี้แล้วไปติดต่อประเทศต่างประเทศโดยตรงด้วยตัวเองเลย
- ตอบ : ด้วยตัวเองเลยก็จะมี มีนะครับ
- ถาม : เช่น
- ตอบ : อย่างเช่นว่า Laos และ มาเลเซีย
- ถาม : ครับ
- ตอบ : ปากีสถาน เราก็มีตัวแทนซึ่งเราก็ไปพยายามหาจากหนังสือแมกกาซีน

- ถาม : ครับ
- ตอบ : ที่เกี่ยวกับการดับเพลิงว่า เอ๊ะ ประเทศกลุ่มนี้ มีใครค้าขายเรื่องรถดับเพลิงอยู่นะครับ
- ถาม : ครับ
- ตอบ : เป้าหมายที่ผมเล็งเอาไว้ตรงนั้นก็คือว่า ถ้าเขาทำธุรกรรมเรื่องรถดับเพลิงอยู่
- ถาม : ครับ
- ตอบ : หรืออุปกรณ์ดับเพลิงชิ้นใหญ่ ๆ อยู่เนี่ย
- ถาม : ครับ
- ตอบ : โอกาสที่เขาจะเอารถเราไปขายเนี่ยมันก็จะมีโอกาสที่เขาเคยจะค้าขายรถก็มีประสบการณ์ตรงนั้นแล้ว
- ถาม : ครับ
- ตอบ : ซึ่งผิดกับบริษัทที่เคยขายแค่สายดับเพลิง เคยขายหัวฉีด ก็จะไม่รู้ อาจจะไม่นัดในการขายสินค้าใหญ่ ๆ
- ถาม : ครับ
- ตอบ : เรามีโอกาสที่ไปขายตรงนี้ หลายประเทศเขาก็มาหาเรา เพราะเราเคยไปติดต่อหลายบริษัทที่เขาไม่เคยสนใจเท่าไร
- ถาม : ครับ
- ตอบ : เพราะเขามีผู้ค้าอยู่แล้ว
- ถาม : ครับ ก็คือ สรุปได้ว่าการติดต่อกับต่างประเทศ แتبๆ อาจจะเรียกได้ว่า 100 เปอร์เซ็นต์เลยหรือเปล่าครับที่ เอ่อ เราต้องใช้พาร์ทเนอร์ส่วนกลาง แล้วพาร์ทเนอร์ก็เอาไปขายกับ เอ่อ ลูกค้าที่ใช้รถดับเพลิงจริง ๆ อีกทีนึง
- ตอบ : ส่วนใหญ่เราจะต้องอาศัยคนท้องถิ่น
- ถาม : ต้อง ต้องอาศัยคนท้องถิ่นนะครับ
- ตอบ : แต่ในเมื่อทำสัญญาแล้ว เราทำสัญญาตรงหรือสัญญาผ่านก็ได้
- ถาม : ก็
- ถาม : ครับ
- ถาม : ลืมบอกไปว่า เอ่อ การสัมภาษณ์ในครั้งนี้อาจจะไม่มี จะไม่มีการ เอ่อ เอ่ยชื่อถึง ชื่อ นามสกุลของคุณ ST นะครับและจะไม่มีการพูดถึง เอ่อ ชื่อบริษัทด้วยนะครับ และประเทศต่าง ๆ ที่ยกตัวอย่างมาอาจจะประเทศ อาจจะต้องเป็นประเทศเอ ประเทศบีไปอะไรอย่างเงี้ย เพราะว่าตอน ๆ ถอดที่จริงไม่ต้องห่วงนะครับ แต่คุณ ST ก็สามารถพูดได้อย่างเต็มที่เลยนะครับ ครับปัญหาที่คุณ ST ทำงานเนี่ย โอ้โฮ ทำงานแบบทั้งฝ่ายซื้อฝ่ายขายด้วยในต่างประเทศและก็ยังช่วย เอ่อ ในฝ่ายการผลิตด้วยครับ พบกับปัญหาใด ๆ บ้างครับที่เจอะ ที่เจอค่อนข้างบ่อยเลย

- ตอบ : ที่เจอค่อนข้างบ่อย เอ่อ ถ้าพูดถึงการจัดซื้อต่างประเทศ และในส่วนตัวผมมองนะครับ
- ถาม : ครับ
- ตอบ : ว่าปัญหาที่ผมเจออยู่ เอ่อ เราพูดถึงปัญหาในที่นี้ว่า จะพูดถึงอะไรคือะ ถ้าการซื้อของ คือ การวางแผนหน่วยงาน
- ถาม : ครับ
- ตอบ : สินค้าก็จะมาได้ทันเวลา
- ถาม : ครับ
- ตอบ : ถ้าการซื้อของประสานกับผู้ที่ให้นำของไปใช้อีกนิดนึง ก็จะสามารถซื้อของได้ทันเวลา
- ถาม : ครับ
- ตอบ : และซื้อของได้ในราคาที่สมเหตุสมผล และไม่ถึงขนาดที่รีบเร่งกันจนเกินไป
- ถาม : ครับ
- ตอบ : อย่างเช่นว่าซื้อของในนาที่สุดท้ายอะไรเนี่ย ก็จะส่งผลกระทบต่อผู้ที่นำของไปใช้ต่อ ๆ ไป แต่สิ่งที่เห็น ก็คือว่าการวางแผนเป็นสิ่งที่ดี ถ้าบุคลากรเราเนี่ย ศักยภาพในเรื่องทำหน้าที่ยังไม่เพียงพอก็น่าจะมีการพัฒนา พูดตรง ๆ ว่าจัดซื้อต่างประเทศเนี่ย เราไม่ได้รับพนักงานที่ทำงานที่นี่ ไม่ใช่พนักงานที่จบทางด้านซื้อของจริง ๆ
- ถาม : ครับ
- ตอบ : พนักงานที่เรานำเข้ามาแล้วมาฝึกการใช้งาน ปัญหาอุปสรรคหลักของการทำงานใน เอ่อ สายงานต่างประเทศนี้คือ ภาษา
- ถาม : ครับ
- ตอบ : ผมมองนะครับ ภาษาเป็นหลักเลย ต่อให้คุณเก่งในการเจรจาต่อรองขนาดไหน ถ้าภาษาคุณไม่ได้ เทคนิคในการสื่อสารถึงเขามันก็จะปัญหา 2 เราตั้งนโยบายไว้ว่า เราจะซื้ออะไร เราต้องรู้จักสินค้าชิ้นนั้นที่จะซื้อ
- ถาม : ครับ
- ตอบ : เพื่อรู้จักสินค้าชิ้นนั้น ภาษาจะเป็นสื่อให้เห็นที่ดีครับ
- ถาม : ครับ ก็คือปัญหาที่กล่าวมาอาจจะซื้อของไม่ทัน อะไรไม่ทัน ไม่ใช่ว่า นอกๆ จากที่ เอ่อ ผู้ได้บังคับบัญชาของคุณ ST เนี่ย ไม่ได้มีความรู้ทางการจัดซื้อซะโดยตรง อาจจะมีปัญหาทางด้านภาษาค่ะ แล้วก็การวางแผนมีไหมครับ
- ตอบ : วางแผนเป็นหลัก
- ถาม : วางแผนเป็นหลัก
- ตอบ : ผมเชื่อว่า ปัญหาทุกอย่างโดยปราศจากการวางแผน ถ้าไม่วางแผนก่อน ไม่รู้ว่าจะต้องซื้ออะไร ใช้เมื่อไหร่
- ถาม : ครับ

- ตอบ : และเขาจะมีศักยภาพในการโต้ตอบเรามากน้อยขนาดไหน จะใช้ได้ทัน
- ถาม : องค์ความรู้เนี่ยไม่ว่าจะเป็นองค์ความรู้ทางด้านสินค้า เพราะคุณ ST บอกว่า ถ้าเกิดจะซื้ออะไร จะซื้ออะไรเนี่ย เราควรรู้จักสินค้าตัวนั้นๆ นะครับ จะทำยังไงให้พนักงานเหล่านี้ มีความรู้ในด้านของอุปกรณ์ดังกล่าว
- ตอบ : จริง ๆ ก็เป็น ผมเชื่อว่าเป็นความรับผิดชอบของผู้ดูแลแผนกนั่นเอง
- ถาม : เพราะคุณ ST
- ตอบ : ทางหน่วยงานก็คือผมในการให้ความรู้
- ถาม : ครับ
- ตอบ : ในการแนะนำให้เขาารู้
- ถาม : ครับ
- ตอบ : นะคะแต่บุคคลจะรู้ไม่รู้ เหมือนกับโรงเรียนกวดวิชา
- ถาม : ครับ
- ตอบ : คุณเก่งมากเลย
- ถาม : ครับ
- ตอบ : และคุณก็นั่งอยู่ในห้องนั้น คุณไม่ได้ใส่ใจจะรู้ คุณก็ไม่รู้
- ถาม : ครับ
- ตอบ : หรือคุณพูดขึ้นข้างๆ คุณๆ อาจารย์คนเดียวกันสอน คนนี้รับได้ 20 คุณรับได้ 2
- ถาม : ครับ
- ตอบ : แต่ว่า in put มาเหมือนกัน
- ถาม : ครับ แล้วตอน ตอนนี เอ่อ นักเรียนของคุณ ST นี้รับได้ที่เปอร์เซ็นต์ 2 เปอร์เซ็นต์ หรือ 20 หรืออะไรก็เปอร์เซ็นต์ดีครับ
- ตอบ : ก็รับได้น้อยนะ
- ถาม : รับได้น้อย
- ตอบ : รับได้น้อย ในที่นี้ว่า เราพูดถึงโรงเรียนกวดวิชานะ เราไม่ได้พูดถึงโรงเรียนที่ต่างๆ ไป
- ถาม : ครับๆ
- ตอบ : กวดวิชาคือคุณจ่ายเงินพิเศษเข้าไป
- ถาม : ครับ
- ตอบ : เพื่อที่จะเรียนรู้
- ถาม : ครับ
- ตอบ : เท่านั้นเอง เหมือนกับคุณเข้ามาในสายงานนี้ นโยบายเขียนชัดว่าคุณต้องรู้สิ่งที่คุณจะซื้อ
- ถาม : ครับ
- ตอบ : ถ้าคุณไม่รู้ ในส่วนหนึ่งก็คือ คุณไม่ได้ทำตามนโยบายบริษัทอยู่แล้ว

- ถาม : ครับ
- ตอบ : จะรู้ยังงัยก็อยู่ในการขวนขวาย ซึ่งเราเคยพูดเสมอว่า เราก็ให้วิธีการไปแต่ว่าพูดได้อย่างหนึ่งนะ ถ้าคุณไม่เข้าใจอะไรให้มาถาม ซึ่งตัวผมเอง ตัวเราเองเนี่ย ไม่เคยปฏิเสธว่า รอไว้ก่อน แต่เราจะทำงานอื่นไว้อะ มีปัญหาอะไร เพราะเราต้องการให้เขาเดินให้ได้ ถ้าเขาเดินได้คล่องเราก็ไม่สะอึก
- ถาม : วิธีการที่ช่วยให้เขาเดินได้คล่องกว่านี้ น่าจะมีวิธีการแก้ปัญหาได้อย่างไรบ้างครับ
- ตอบ : อยู่ที่ตัวบุคลากร ณ ที่ผมพูดอยู่ที่ตัวบุคลากร
- ถาม : ที่จะไม่รู้
- ตอบ : ที่จะไม่รู้
- ถาม : มีแรงโมจิเวชั่น หรือ แรงกระตุ้นอย่างไรเพื่อให้เขาใฝ่รู้ได้มากกว่านี้ไหมครับ ออกข้อสอบหรือเป็นนโยบายใหม่อะ หรืออย่างไร
- ตอบ : ผมพูดว่าผลงานที่ออกมาเนี่ย คือตัวชี้บ่งนั้นแหละว่า เฮ้ย ถ้าคุณรู้มากกว่านี้ จุดนี้ไม่น่าผิดพลาดนะ
- ถาม : ครับ
- ตอบ : ถ้าคุณวางแผนมากกว่านี้ รถจะส่งพรุ่งนี้แล้วคุณเพิ่งจะออกไปตั้งชื่อเมื่อวานนี้เอง มันก็เห็นชัดอยู่แล้วละว่าทำไม นโยบายมันไม่ใช้นะ
- ถาม : ครับ
- ตอบ : ไม่เคยว่า คุณเซฟเงินเป็นทุกสตาจ์ก็ได้ คือ ส่งมาของเขานับ ขึ้นรถบัส ไม่เคย
- ถาม : ครับ
- ตอบ : นโยบายพูดชัดว่า ของจะต้องอยู่ในโรงงานอย่างน้อย 2 เดือนก่อนรถออก
- ถาม : อันนี้เป็นนโยบาย
- ตอบ : นโยบาย
- ถาม : ในฝ่ายที่ชัดเจนเลขนะครับ แนวโน้ม เอ่อ วิธีการแก้ปัญหาก็คือคุณ ST บอกว่ามันอยู่ที่ความใฝ่รู้ของแต่ละบุคคล มีวิธีการใดกับมีเรื่อง มีวิธีการใดที่จะต้องไปเตือนเขาใหม่อะ หรือยังงดี
- ตอบ : ผมเชื่อว่าอาจจะจะมี วิธีที่ทำให้เกิดผลจริงๆ ก็คือตัวเราเองจะต้อง จะต้องเขาขังใจอะ เกี่ยวเชิญ
- ถาม : ครับ
- ตอบ : มันไม่ใช่โรงเรียนกวดวิชาแล้วละ ต้องดึงคุณกลับมาในโรงเรียนสามัญทั่วไปแล้ว ที่อาจารย์จะเชิญเชิญคุณ คุณไม่เรียนไม่ได้
- ถาม : ครับ
- ตอบ : คุณต้องเรียน แต่กวดวิชา ไม่มีคนมาสนใจ ไม่สน

- ถาม : แล้วทางคุณ ST จะวางตัวเป็นผู้กวตวิชาหรือเป็นโรงเรียนปกติดีละครับ
- ตอบ : ผมเป็นเหมือนอาจารย์คนหนึ่ง
- ถาม : ใช่
- ตอบ : คุณอยากให้ผมสอนคุณในโรงเรียนกวตวิชา หรือคุณอยากให้ผมสอนคุณในโรงเรียนสามัญ
- ถาม : ก็
- ตอบ : ซึ่งมีทั้งการศึกษาและการอบรมในเวลาเดียวกัน
- ถาม : ครับ ๆ
- ตอบ : ทุกวันนี้ผมคิดว่าผมพยายามให้ทั้งสองอย่าง ลงมาคุย ลงมาพูด ลงมาอะไรต่าง ๆ แต่ไม่ถึงกลับขนาดว่านำนักเรียนมาตีหน้าเสาธง
- ถาม : ครับ โรงเรียนนี้มีการสอบใหม่ครับ ของครูผู้ดีมีการสอบหรือการทดสอบอย่างไรบ้างไหมครับ
- ตอบ : สอบกันด้วยผลงาน
- ถาม : อ้อ
- ตอบ : เรียกว่าการสอบด้วยผลงาน
- ถาม : แต่ แต่ที่โรงเรียนนี้ตอน เออ ที่เคยเรียนมานี้คือเขามีใบเกรดด้วยนะครับ ว่าได้เกรด 3 เกรด 4
- ตอบ : ยัง ยังไม่เคย เกรดตรงนั้นนะ
- ถาม : ครับ ๆ
- ตอบ : มันก็ออกมาจากผลตอบแทนที่บริษัทให้ ซึ่งตรงนี้เราก็ได้ปีนี้ไม่มีการปรับหรือ การปรับอัตราผลตอบแทนไม่ใช่เป็นสิ่งที่ทำโดยอัตโนมัติ
- ถาม : ครับ
- ตอบ : แต่เป็นผลตอบแทนที่บริษัทให้คืนคุณในสิ่งที่คุณต้องทำ
- ถาม : เพราะว่า
- ตอบ : มากขึ้นให้แก่บริษัท
- ถาม : ของเรา ครับ ๆ ๆ
- ตอบ : เหมือนกับหลายคนถาม เป็นปกติหรือที่บริษัทต้องให้โบนัสคุณ
- ถาม : ครับ
- ตอบ : ไม่ใช่ ในสัญญาว่าจ้างไม่เกี่ยวข้องกับเอาไว้
- ถาม : ไม่เกี่ยวข้องกับใช่ไหมครับ
- ตอบ : ไม่ได้กล่าวไว้
- ถาม : ครับ ๆ ๆ

- ตอบ : แต่เป็นสิ่งที่บริษัทจะตอบแทนในสิ่งที่คุณได้ทำเกินเลยขึ้นมา
- ถาม : ครับ ๆ
- ตอบ : โดยสิ่งนั้นบริษัทเอามาจากไหน เอามาจากผลประกอบการที่ได้กำไรมา
- ถาม : ก็ตัวที่ได้กำไรมาหรือเซฟเงินก็ยังมี
- ตอบ : ครับ
- ถาม : นะครับ เออ มีปัญหาทางการสื่อสาร หรือ การประชุมกัน เออ ในฝ่ายหรือระหว่างฝ่ายมากน้อยยังงัยบ้างครับ ตอนนีความถี่ในการพูดคุยไม่ว่าจะเป็นทางการและไม่เป็นทางการนี้เป็นยังงัยบ้างครับ
- ตอบ : ส่วนใหญ่ก็ต้องเป็นทางการ
- ถาม : ครับ
- ตอบ : ก็คือลงมาคุย หรือเวลาเขานำเอกสารมาให้เซ็น
- ถาม : ครับ ๆ
- ตอบ : ซึ่งผม ผมวางนโยบายไว้อย่างหนึ่งว่า อย่างที่เอกสารบนโต๊ะผม ผมไม่เซ็นให้
- ถาม : ครับ และต้องทำยังงัยครับ
- ตอบ : ก็ต้องเอามาเซ็นกับตัว แล้วผมจะทราบ ผมจะตอบตรงนี้ ใบสั่งซื้อทุกใบอย่างกองบนโต๊ะ เป็นปีกให้ผม และให้เลขา หรือธุรการที่เอกสารเซ็น ผมไม่เซ็นสักฉบับหนึ่ง คุณเอามาเสนอทีละแผ่น แล้วผมจะถามใบสั่งซื้อ ชื่ออะไร ชื่อไปทำไม ผมจะใช้เหตุการณ์นี้เป็นการสอน ให้ทุกคนที่มาหามาเซ็นใบสั่งซื้อกับผมต้องเตรียมอะไรบ้าง
- ถาม : ต้องเตรียมอะไรบ้าง
- ตอบ : ต้องเตรียมการบ้านมา
- ถาม : ครับ ๆ เออ การประชุมอย่างเป็นทางการ เออ การประชุมภายในฝ่ายนี้ มีบ้างไหมครับ หรือไม่บ่อยมี
- ตอบ : ที่ผ่านมาน้อย
- ถาม : น้อยเลยใช่ไหมครับ
- ตอบ : เพราะเรา น้อย ในฝ่ายนะ
- ถาม : ครับ มากกว่า
- ตอบ : หรือก็คือพูดคุยมันเป็นปัญหาพูดคุยทันทีเลย
- ถาม : ครับ ๆ
- ตอบ : ไม่ว่าทาง Internetทันที แต่การสื่อสารทาง Internet จะเห็นว่าผมสื่อ สื่อถึงทุกคนที่เกี่ยวข้อง งานนี้ งานซื้อผู้ซื้อก็จะเกี่ยวข้อง
- ถาม : ครับ
- ตอบ : งานนี้งานขาย เจ้าหน้าที่ฝ่ายขายก็จะเกี่ยวข้อง

- ถาม : ครับ
- ตอบ : แต่นั่งประชุมเป็นทางการยังไม่เคยเป็นเรื่อง
- ถาม : ครับๆ
- ตอบ : เคยแค่ครั้งหนึ่งหรือสองครั้งที่ผมอบรมขึ้นทันที
- ถาม : ครับๆ
- ตอบ : แล้วก็อบรมใหม่ อบรมใหม่
- ถาม : การอบรม การอบรม เอ่อ สำหรับพนักงานบางท่านเนี่ย เอ่อ เพิ่งเข้ามาแค่ปีเดียว บางท่านก็ 4 ปี 5 ปี ช่วงนี้คุณ ST มีนโยบายในการอบรมให้ความรู้ ถ่ายทอดความรู้ไม่ว่าจะเป็นความรู้ในการจัดซื้อ ความรู้ทางด้านการขายและความรู้สำหรับอุปกรณ์ที่เราใช้อย่างไรบ้างครับ
- ตอบ : ยังไม่ได้วางนโยบาย
- ถาม : ยังไม่ได้วาง
- ตอบ : ยังไม่ได้วางแนวทางเลย
- ถาม : แนวทางเลย
- ตอบ : แต่ว่าเมื่อเรามีเวลาเราคิดว่า เฮ้ย ช่วงนี้มันมีน่าจะทำสิ่งนี้นะ
- ถาม : ครับ
- ตอบ : เราก็จะทำเลย
- ถาม : ครับ หรือตอน
- ตอบ : หรือถ้าเป็นงานขายเนี่ย ผมให้พนักงานผมพูดคุยกันในห้อง
- ถาม : ครับ
- ตอบ : พูดคุยกันในห้องเกือบทุกวันได้เลย อย่างเมื่อวานเวลาอาจารย์แถมมาคุย
- ถาม : ครับ
- ตอบ : ใครเข้าใจไหม เขาจะนั่งฟัง เพราะว่าสิ่งที่เราคุยเนี่ย เป็นสิ่งที่เขาจะติดต่อหรือผ่านสิ่งที่ผมสื่อกับท่านซัพพลายเออร์
- ถาม : ครับ
- ตอบ : เขาก็จะเข้าใจ เพราะผมจะถาม เอ๊ยงานนี้ตอบ เขาเข้าใจครับ
- ถาม : ครับๆ คิดว่าการอบรมเนี่ย จะเกิดขึ้นโดยการวางแผนทาง โดยฝ่ายคุณ ST เอง หรือว่าเอชอาร์เข้ามาช่วยด้วย หรือว่ายังไงบ้างครับ
- ตอบ : ถ้าอบรม ในส่วนของเนื้อหาเฉพาะเนี่ย ควรเป็นตัวผมเองหรือว่าผู้จัดการฝ่าย
- ถาม : ครับๆ
- ตอบ : จัดทำมากกว่า แล้วขอประสานงานกับฝ่ายเอชอาร์
- ถาม : แต่ถ้าเกิดเป็นเรื่องของการซื้อและการขาย

- ตอบ : ถ้าพูดถึงเรื่องศักยภาพของตัวบุคคลแล้วเนี่ย น่าจะเป็นฝ่ายเอชอาร์
- ถาม : ครับ
- ตอบ : ซึ่งเป็นการดำเนินให้เนะ
- ถาม : ครับๆ
- ตอบ : แต่เอชอาร์ไม่สามารถรู้หรือกว่าเรามีปัญหาอะไรอยู่
- ถาม : ครับ
- ตอบ : นอกจากเอชอาร์มาคุยกับหัวหน้าฝ่ายว่า มีปัญหาอะไรไหม ในการตรวจ
- ถาม : ต้องอยากให้อบรมใน หรือนอก หรือว่าอย่างไร
- ตอบ : ใช่
- ถาม : ครับ
- ตอบ : เพื่อ ๆ นำมาทำแผนระยะยาวระหว่างปี
- ถาม : ครับ เวลาเราไปติดต่อบริษัทที่เราจะไปค้าขายด้วย โดยที่ไม่ผ่านบริษัทกลางอย่าง อินเทอร์เน็ตชู่เนะครับ คุณ ST เนี่ยใช้วิธีการใดในการเลือกคัดสรรบริษัทที่เราจะเข้าไปทำการค้าด้วย อย่างที่อินเดียเห็นว่า เอ่อ ต้องเลือกบริษัทจากหนังสือจากอะไรอย่างนี้ใช่ ไหมครับ
- ตอบ : ใช่ อย่างต้องเลือกที่เขาทำธุรกิจดับเพลิงหรือเปล่า
- ถาม : ครับ
- ตอบ : ถ้าเขาไม่ได้ทำแล้วเราจะไปขายให้เขาทำไม
- ถาม : ครับๆ
- ตอบ : เป็นหลักเลย แต่ว่าถ้าเป็นธุรกิจดับเพลิงเราก็เลือกที่เขาอยู่ว่า เขาขายธุรกิจระดับไหน เขาขายแค่ดับเพลิง โฟมดับเพลิง แต่ผมเจาะเขา เขาขายรถดับเพลิงอยู่แล้ว แต่รถดับเพลิงที่เขาขายยี่ห้อที่เขานำเข้าจากยุโรป
- ถาม : ซึ่งแพงมาก
- ตอบ : แต่เราก็ เฮ้ย ผมมีข้อเสนอมานะ รถดับเพลิงเหมือนกัน
- ถาม : ครับ
- ตอบ : ราคาดีกว่า คุณภาพเท่ากัน
- ถาม : ครับ
- ตอบ : ถ้าเขาเป็นผู้ค้าที่ยังไม่ผูกสัมพันธ์ไมตรีอย่างแน่นแฟ้นกับยุโรป เขาอาจหาทางเลือกแล้ว
- ถาม : ครับๆ แล้วก็วิธีการเข้า เอ่อ การคัดเลือกรับเหล่านี้หาได้จากอะไรครับ คัดเลือกจากไร ครับ Internet หรือหนังสือ
- ตอบ : เป็นส่วนใหญ่ที่ผมใช้ตอนนี้ก็คือ นิตยสารดับเพลิง
- ถาม : ครับ

- ตอบ : ชื่อว่า ฟลายสเตจเอเชียแอนด์วินเดอร์เซีย ก็คือบริษัทในเอเชียและตะวันออกเฉียงใต้ที่เขาทำธุรกิจเรื่องดับเพลิง
- ถาม : ครับ
- ตอบ : ซึ่งในหนังสือเล่มนี้อาจจะลง เอ่อ บริษัทอยู่ประมาณครึ่งหนึ่ง เพราะอีกครึ่งเขาอาจจะไม่ลง เขาไม่มาสนใจลงเขาก็ไม่ลง
- ถาม : ผ่าน ผ่านเนี่ยคิดว่าเยอะมากเหมือนกันนะครับ ครับ เอ่อ มีแนวโน้มในการสร้างความสัมพันธ์ระยะยาวเนี่ย เอ่อ กับ เอ่อ พาร์ทเนอร์ตรงนี้อย่างไรบ้างครับ
- ตอบ : วิธีการหนึ่งก็คือเรื่องของการพยายามให้เขามีข้อมูลในการขายให้มากที่สุด
- ถาม : ครับๆ
- ตอบ : ที่กำลังคุยอยู่ทุกวันนี้ละอะ
- ถาม : ครับ
- ตอบ : พาร์ทเนอร์เรามันก็เหมือนกับเซลล์ของบริษัทคนนึง
- ถาม : ครับ
- ตอบ : เราต้อง ถ้าเราอยู่ในตำแหน่งของเซลล์ผู้้นเวลาไปหาลูกค้า ตัวเราเองก็ต้องคิดว่าเราต้องสมารถพอ
- ถาม : ครับ
- ตอบ : ไปหาลูกค้าเราต้องรู้มากกว่าลูกค้า
- ถาม : ครับ
- ตอบ : นะอะ ไม่ต้องพูดถึงว่าคุณต้องรู้ลูกค้ามากเอาเป็นว่าเราเป็นเซลล์แมน เมื่อเป็นเช่นนี้แล้วผม ถ้าเรามองว่าลูกค้าเราเนี่ยเหมือนเซลล์เราคนนึงเนี่ย ฉะนั้นเราต้องทุ่มเวลาให้เขา ซึ่งการจัดเตรียมข้อมูลที่เขาต้องการ
- ถาม : ครับ
- ตอบ : ถึงขนาดบางครั้งถ้าเขามาเยี่ยมเรา เราจะพาเขาไปดูโรงงานแล้วให้เขาดูรายละเอียดในให้เขาได้เห็นภาพว่าสิ่งที่เราเขียนเป็นตัวอักษรให้เขาเนี่ย มันหมายถึงสิ่งนี้นะ
- ถาม : ครับ
- ตอบ : นี่เป็นส่วนหนึ่ง เราเชื่อว่าถ้าเขามีศักยภาพ มีข้อมูล มีอาวุธพร้อม เขาสู้อให้เราได้สบายเลย
- ถาม : ครับ เป็นเรื่องจริงนะครับ แล้วก็แนวโน้มในการดำเนินความสัมพันธ์ระยะยาวกับคนที่ เป็น เอ่อ ซัพพลายเออร์จากต่างประเทศของเราเนี่ยเป็นอย่างไรบ้างครับ
- ตอบ : พูดถึงนโยบายเอง ก็ไม่มี
- ถาม : ไม่ชัดเจน
- ตอบ : ไม่เคย ไม่เคยคิดเป็น ไม่เคยคิดนโยบายเป็นลายลักษณ์อักษรนะ
- ถาม : ครับๆ

- ตอบ : แต่ว่าโดยทางชำระความ เมื่อเขาไปมาหาสู่กัน
- ถาม : ครับ
- ตอบ : ให้ความสนิทสนมกัน
- ถาม : ครับ
- ตอบ : อย่างนี้มากกว่า
- ถาม : ครับ
- ตอบ : ซึ่งเราจะค่อนข้างให้ความสะดวก เป็นส่วนตัวกับตัวแทนของซัพพลายเออร์ที่มาหาเรา
- ถาม : ครับ
- ตอบ : โดยถ้าเรามอง อันนี้ก็คือความคิดของผมนะครับ
- ถาม : ครับๆ
- ตอบ : นี่ก็คือความคิดของผม ผมไม่แน่ใจนะว่า
- ถาม : ครับๆ
- ตอบ : พวกเขาเนี่ยก็คือลูกจ้างบริษัท
- ถาม : ครับ
- ตอบ : เพราะขายมาก ขายได้น้อย อาจจะไม่มียอดมียอด
- ถาม : ครับ
- ตอบ : เขาไปมาหาสู่มาหาเรา เขาเสียเวลาส่วนตัวเดินทางมาหาเรา เพื่อสร้างงานขายเขาให้ได้ เราก็ดูแลเขาอาจจะมี เอ่อ สิ่งตอบแทนให้เขาเป็นการส่วนตัวไป
- ถาม : ครับ
- ตอบ : ก็จะทำให้เขาสามารถให้บริการแก่เราได้มากขึ้น
- ถาม : ครับๆ เวลาที่ เอ่อ โดยปกติเนี่ยเราติดต่อผ่าน ITC นะครับ แล้วก็ ITC ก็จะมีเน็ตเวิร์กอยู่แทบทั่วโลกเลย คราวนี้เวลาแต่ถ้าเกิดเราต้องไปติดต่ออย่างเช่นบริษัทของ เอ่อ บริษัทในประเทศอื่น ๆ เอง นอกจากวิธีการหาจากหนังสือแมกกาซีนดังกล่าวแล้วเนี่ย มีบุคคลใดพาไปให้รู้จักกับอีกบุคคลหนึ่งไหมครับ
- ตอบ : ซัพพลายเออร์
- ถาม : ซัพพลายเออร์พาเราไป
- ตอบ : เอ่อ คือ เวลาซัพพลายเออร์เราไป สมมุติว่า ซัพพลายเออร์
- ถาม : ครับ
- ตอบ : เขาขายอุปกรณ์เกี่ยวกับไฮโดรลิก
- ถาม : ครับๆ
- ตอบ : ในแถบภาคพื้นเอเชีย เขามาหาเรา เขาก็มีความตั้งใจมาแนะนำสินค้า
- ถาม : ครับๆ

- ตอบ : แต่คนนั้นไม่ได้มาขายให้ประเทศไทยประเทศเดียว เขามีลูกค้าที่มาเลเซีย มีลูกค้าที่ในเอเชีย
หมดเลย เขารู้จักดี
- ถาม : ครับ
- ตอบ : เราคงให้โอกาสนี้ เอ๊ะ ที่มาเลขคุณเป็นใคร
- ถาม : ครับ
- ตอบ : เขาต้องทำอะไรเก่งไหม ผมอยากเนี่ยขายรถดับเพลิงผมอะ ช่วยหน่อยสิ คุณติดต่อสร้าง
สัมพันธได้ผมมีคำตอบตอบแทนให้
- ถาม : ครับ
- ตอบ : เอาสิ เออ อันนั้นมันก็ไม่ได้ทำอยู่นะแต่มันหารถดับเพลิงอยู่ มันทำ เดียวผมลิงก์ให้
- ถาม : ครับ
- ตอบ : ช่วยได้ ช่วยได้มากเลย
- ถาม : ก็ได้ซัพพลายเออร์ส่วนนี้ด้วย ตอนนี้มีเรื่องระบบไอทีเข้ามาเยอะเลย ระบบเทคโนโลยี
สารสนเทศ ตอนเนี่ยคุณ STคิดว่าระบบ เอ่อ สารสนเทศในองค์กรเนี่ย มีประสิทธิภาพ
แล้วก็ช่วยได้ ช่วยคุณ STในการทำงานได้มากน้อยขนาดไหนครับ หรือยังไม่เท่าไรเลย
- ตอบ : ในส่วนของผม ผมพูดว่า สารสนเทศ ไม่ได้องค์กรอะนะ
- ถาม : ครับ
- ตอบ : ช่วยในการซื้อ ขายของเราได้มาก
- ถาม : ครับ
- ตอบ : หลายอย่างที่เราขายอยู่ทุกวันนี้ขายผ่าน Internet
- ถาม : ครับ
- ตอบ : ส่งข้อมูลทาง Internet ส่งทางนี้ ๆ ไปมากกว่าจะมากกว่า
- ถาม : ครับ
- ตอบ : สัญญาเซ็นกันทาง Internet เลย
- ถาม : ครับ
- ตอบ : แต่ว่าไอทีขององค์กรคุณในภาพรวมช่วยเราไหม ผมยังไม่เห็นอยู่ดี
- ถาม : ไม่เห็นภาพนะครับ เพราะว่าอาจจะเพิ่งเข้ามาด้วย
- ตอบ : ใช่ๆ
- ถาม : นะครับ หมายถึงไอทีเพิ่งเข้ามา ไม่ใช่คุณ STเพิ่งเข้ามา นะครับ เพราะคุณ STนี้ เอ่อ
ทำงานอยู่กับบริษัทดังกล่าวนี้ประมาณกี่ปีแล้วนะครับ
- ตอบ : ทำอยู่นานสัก 16 18
- ถาม : 18 แล้วหรือครับ
- ตอบ : แก่แล้ว

- ถาม : ครับๆ องค์กร องค์กรของท่านเนี่ยมีนโยบายเกี่ยวกับมาตรฐานอย่างไรบ้างครับ ตอนนี้บริษัทนี้มีมาตรฐานชื่อมาตรฐานอะไรบ้าง แล้วก็สินค้าที่คุณ STดูแลอยู่มีมาตรฐานอย่างไรบ้าง
- ตอบ : มาตรฐานสินค้าหรือว่าแผนการจัดการ
- ถาม : ด้วย มาตรฐานสินค้าและมาตรฐานการจัดการครับผม
- ตอบ : มาตรฐานสินค้าผมยังไม่มี เชื่อว่าบริษัทเรานะ ยังไม่มีมาตรฐานสินค้าหรอก
- ถาม : เป็นเอ็นเอฟทีเอ
- ตอบ : พุดถึง พุดถึงสินค้านี้ เป็นสินค้าที่เราผลิตออกมานะ
- ถาม : ครับ ๆ
- ตอบ : ซึ่งสินค้าที่เราผลิตเนี่ย มาจากการซื้อสินค้าหลายๆ ที่มารวมกัน
- ถาม : ครับ
- ตอบ : เป็นมาตรฐานสินค้า
- ถาม : ครับๆ
- ตอบ : มาตรฐานสินค้าของเราคือระดับเพลิง
- ถาม : ครับ
- ตอบ : เรายังไม่มีมาตรฐานตรงนี้ เราไม่ได้สร้างระดับเพลิงตามมาตรฐานเอ็นเอฟทีเอ แต่เราสร้างถึงน้ำตามมาตรฐานเอ็นเอฟทีเอ เราซื้อปั้มตามมาตรฐานอีเอ็น
- ถาม : ครับ
- ตอบ : เราซื้ออุปกรณ์ไฟฟ้าตามมาตรฐานยุโรปเขาวกัันมา แต่สินค้าของบริษัทคือ ระดับเพลิง 1 คัันเนี่ย

...

B2 Interview (Translation - English)

Name	Mr ST
Date	17 June 2009
Time	14.00 pm

- PP:** Good afternoon, my name is Pakpoom Dejsakulrit and I would like to interview you today. The interviewing will take about 30 – 40 minutes or could be up to one hour. I would leave the conversation open just, in the case that you would like to provide me additional information. My questions are simple and I would like to ask you very generally such as business policy, policy on IT, knowledge management in organisation, and standard used in this company. Shall I start the first question? I would like to start with your major responsibility in this organisation first. Can you please explain Mr ST?
- ST:** My major responsibility involves with all international conducts. Everything about international.
- PP:** Yes
- ST:** Everything involves with international is under my responsibility such as procurement, sourcing materials, and buying and selling
- PP:** Yes
- ST:** Other responsibilities are pretty much depending upon my availability
- PP:** Yes
- ST:** Such as to motivate other staff members to work more efficiently, to control the operational process, to help them solve problems
- PP:** Yes
- ST:**
- PP:** Yes, and what is your position title in this company?
- ST:** General Manager, I do very general things. Don't know how do they call in Thai.
- PP:** Yes
- ST:** I would say...General Manager of the department, mostly in the international trade
- PP:** How about major area that you are currently working at the moment?
- ST:** My responsibilities...like what I told you. It's very clear.
- PP:** Yes
- ST:** In the international department, we divided into three main areas. They are international purchasing...
- ST:** the second one is International selling
- PP:** Yes
- ST:** and the last and recently one is the Business Development

PP: Yes

ST: Or we can say...finding new things. Finding new products to sell. Sometimes, it is very off-topping

PP: Can you explain?

ST: It is only for international market

PP: Yes. And are the two sectors... international selling and domestic selling in the same department? In many organisation? they put these two in the same department.

ST: It is not exactly division or department. I think that we have to adjust and reorganising all the time. I think it is depending heavily on the flexibility of the organisation and how would they arrange them. If they think it is working then why not do it?

PP: Yes

ST: However, what I experienced, buying and selling should be separate...to reduce the confusion.

PP: Yes

ST: In the selling division, I put the flexibility concept in.

PP: Because...you know both buying and selling.

ST: Yes...because I know both selling and buying.

PP: Do you think that you should combine both buying and selling responsibilities under the same division? Because you already experience this and you know them well.

ST: If we have potential then it's another story. It's required great experience to do that. [I have experience but I don't think other people do]

PP: Yes

ST: It is depending with group of customers as well. Buying and sourcing are not major concerns.

PP: Selling maybe a bit problem here. Because international selling is totally different. Other people they do not have experience like us. The products that we sell is not like the products that customers will find easily in the market. We call cogenerating products or generating products. We have to run back and forth and good people to take care. We need people with experience in the industry.

PP: So...what you are saying...you involve with buying and selling products and also help people in the international selling activities. Do you have any policy set forth?

- ST:** If you are asking about policy...we do. We do have to upmost towards customers.
- PP:** Yes
- ST:** More than 90% from my experience. We are not going to the customer directly.
- PP:** Yes
- ST:** We have our trade agent, they are working for us.
- PP:** Yes
- ST:** We have them in other countries that we have connections. [This is all about connection.]
- PP:** Yes
- ST:** Even we have trade agent, however, decision making would be under customers' own decision making. We do approach customers directly as well. For example, in Bangladesh, we use both trade agent and we also approach them directly.
- PP:** Yes
- ST:** In some countries, we have to use trade agent to guarantee and verified financial position of customers. For example, we purchase Isuzu chassis from the ITC, then we also use them as our trade agent.
- PP:** Yes
- ST:** We call them our trade partner
- PP:** Yes, better with the term trade partner?
- ST:** Do you use the ITC for every countries?
- ST:** No...I don't think so. We used ITC in the very beginning. We started partnering with ITC...yes...
- PP:** and...
- ST:** It was about the last 13 years. We started our international cooperation with ITC and a local business called BIN by Mr Mabul
- PP:** Yes...and...
- ST:** We found why should not we do cooperation with them. In the past 10 years, we had two trading companies. They were 1. ITC and 2. KMKC
- PP:** Yes
- ST:** We were very successful with KMKC in the past ten years because KMKC provided us more knowledge and business opportunities

PP: Yes

ST: But they were already consolidated at present

PP: Yes...

ST: ITC still wanted to continue business with us at that time. They offered us more number of customers as well as more international markets. It was not so successful at that time.

PP: Why? Can you explain?

ST: For example, such as Laos and Malaysia... Even though we have trade agent but we still look for our new partner through magazines.

PP: Wow...yes

ST: We tried to find if there is any company selling fire trucks or relevant rescue products. My aim was that...if they sell any big parts of fire rescue products then we would have opportunity for our business. We are different from those companies in the industry that only aimed to sell fire truck or big parts. We sell small fire rescue products as well.

PP: Yes...

ST: Many countries...they approached us directly.

PP: Can I summarised that most of the business you have with other countries were through the trading agents?

ST: Some countries we need local people until we could close deal with them one time then we could do further business with them.

PP: Yes...oh...by the way...forgot to tell you once again that you real name will not be disclosed into the public in this research. I will also not include the real name of the company in the research as well. All name will be pseudonym

ST: ok...that is good ...well most of problems that I encountered from my experience was...what to say...with the planning

PP: what is wrong with that?

ST: If we have very good cooperation, we would be able to purchase products or supplies in time.

PP: Yes...and what do you mean by this?

ST: For example...I do not agree with purchasing supplies in the last minute. I do believe in planning. It is good for the company. I am telling you frankly...that in the International Trade Division, we do not get people from the right field they do not have 'selling' knowledge or experience background.

- PP:** so...
- ST:** We have to train them and the most and major problem was with their international language.
- PP:** oh...yes...
- ST:** The major problem was international language. I can foreseen that...even if you have very good negotiation skill but you cannot communicate with other people in other countries, it is useless. Communication process and technique here at our department is that you have to know what you are buying and the supplies that you are using. Then you will know what you have to communicate with them.
- PP:** Do you also have any other associated problem?
- ST:** I believe that...everything starting from planning...if you do not have good planning then you still in trouble.
- PP:** then...what you think about domain knowledge? Is it important? ..but you said that once you know what to purchase and know their characteristics then everything is fine...
- ST:** well...potential is with people...planning first...then responsibility should be under the head or manager of that department. In my department, I give knowledge to people...they always come to see us.
- PP:** Oh...I see.
- ST:** You educate them?
- ST:** Well we provide information and introduce them to know what they do not know.
- PP:** My department was just like a tutorial institution...knowledge was depending upon the learners...how much they would like to learn. The more you would like to train them...it is useless if they do not wish to learn. In tutorial institution, there could be 20 students sitting inside. Do you think that they get the same information? Do you think that how many of them would understand everything. I don't think that all of them are able to receive information at the same level.
- PP:** Yes
- ST:** They have the same input but the output we get were different and varied.
- PP:** You have given a very good example.
- ST:** Same thing...when they enter to our department...policy said you have got to learn the company and its products.
- PP:** Yes

- ST:** If you don't know products, you are not following the company's policy. It's with people. People always stick with the term 'will do later' but they never complete.
- PP:** Yes
- ST:** If they complete they mission, they learn about the products then I do not need to stuck with them. We could continue with other duties that lining ahead.
- PP:** Yes..how will you solve the problem
- ST:** It is very personal thing. It is with people. They need to have sense of belonging.
- PP:** How about 'motivation'? Can it be any help?
- ST:** I think the outcome is the answer. If you know that you will have to deliver the fire truck to the customer tomorrow but you just placed an order for your supplies today. What do you think? We used to have this problem. They keep information and wait until the last minute.
- PP:** Ohh...is that true?
- ST:** Yes...it was. That's why I said 'you can really see from the output'. If you knew much better, there would not have been any mistake. It is just because you don't care. The company lose benefit.
- PP:** Yes right...
- ST:** What we can do...we need to force them.
- PP:** oh...really...
- ST:** They have to be educated. It's not because they don't know. This is very simple and normal.
- PP:** So...you will be a tutor in your department
- ST:** Ohh...yeah... I am just like their teacher. I teach them to do many things. It is just like a vocational school. We have both knowledge and experience to share.
- PP:** Yes
- ST:** I am giving these two things to all staff members every day, except that I do not do punishment right in front of the class.
- PP:** haha...that's good. Do you have test?
- ST:** I would say...from their output. I can observe from output.
- PP:** Do you grade them?
- ST:** Not really...or maybe I should have.

PP: ...

ST: That what they will get from the company. They do good job...then they get good pay. If they asking about the bonus, this is not what it said in the contract when you first enter to the company. Because, the company impresses and satisfies what you have done for them. This is what they think you should get.

PP: Where did the company get the bonus for their employees from?

ST: Could be from the extra profit, regular profit, or from the company's saving

PP: What about the communication system in the company? Do you have any problem with that?

ST: Our communication here was mostly official. Some with document to sign. I put one policy to them that 'do not leave any document on my table to sign'. I will not sign for them.

PP: Why was that?

ST: Because I need to ensure the right supplies. I have to ask them every single page...why they use that item?...for which customer?...for example.

PP: Right...

ST: I am teaching them this way so that they knew which documents they have to prepare before they come to see me.

PP: How about internal meeting? Do you have any?

ST: Not recently. We don't have that much. Because, we are only few people in our department. We talked right away when we have problem...even in the Internet if we may have to. I copy my message to everyone involved. I teach them to do this as well...I would say...whoever involved.

PP: Not official even once?

ST: Well...just small orientation to let them understand process.

PP: In your training...some of your employees are very new...some only one year, some have 4 – 5 years experience. What is your policy in giving them training, which could be purchasing process or selling process? How would you conduct?

ST: No..not yet...no such a policy here yet.

PP: Right.

ST: If selling, I regularly ask them to discuss in the small room. For example, I asked them to listen to the suppliers so that they knew how to contact with the suppliers. I also asked them many questions. They had to answer many questions.

- PP:** Do you also get involved with HR people to help you to conduct the training?
- ST:** No, mostly I will get myself to do or ask head division or department to do. However, HR also take their role when necessary.
- PP:** I see...so...what about inside the business?
- ST:** We have to teach them to know products of business and we source suppliers, sometimes through magazines
- PP:** How do you treat your business partner?
- ST:** Our business partners are just like our sales team. We try to provide and support them our information as much as we can. We have to think as if we are sales people ourselves. How do we approach customers? They will have to do the same thing. We have to provide them our information as much as we can. Prepare them to be ready to provide information on behalf of us.
- PP:** Wow...yes...
- ST:** When they visit us at our own premises, we have to show them our company and manufacturing. We have to let them see our company as if they read from brochures.
- PP:** Yes... how about suppliers?
- ST:** Yes...we do have good long relationship with our suppliers?
- PP:** Do you have them in official policy?
- ST:** We never wrote them in an official policy
- PP:** So...it's not really clear?
- ST:** But we often visit each other. We know each other so well. We treat our suppliers so comfortable.
- PP:** Yes...and..
- ST:** They are just part of us. They are travelling back and forth. They visit us...they sell products for us...so...we just treat them...I don't see why not?
- PP:** Do you also use other business network?
- ST:** Yes we do. Suppliers helped to match us with other business partners as well. When they go, they also refer our name.
- PP:** How about information system in your company?
- ST:** Yes...many product we sell through Internet.
- PP:** Do you think that IT helpful?

ST: Well...IT system is still very new to the organisation. I have been in this company for 18 years. [interview in 2009].

PP: How about standard?

ST: For product? Or administrative? What do you mean?

PP: Well can you explain from what you understand to my questions?

ST: We do not have our own standard. But we use both domestic and international standard to control our product quality.

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Appendix C

LIST OF EQUIPMENT INSTALLED IN CCC

- C1 A list of IT equipment and a description of what was eventually installed in CCC**

C1 A list of IT equipment and a description of what was eventually installed in CCC

Description	Quantity
AD1, ChaseDB	
HP ProLiant DL360 G4 CTO Chassis	1
Smart Array P400i Controller	1
Quad-Core Intel® Xeon® Processor E5430 (2.66 GHz, 12MB L3 Cache, 80W, 1333, HT, Turbo 1/1/2/2)	1
1GB PC2-667 DDR II SDRAM, Advanced ECC	4
HP 146GB 6G SAS 10K 2.5in DP ENT HDD	2
HP Slim 12.7mm SATA DVD Optical Kit	1
HP 256MB FIO P-Series Cache Module	1
HP NC373i PCI Express Dual Multifunction	2
HP 350W HE 12V Hotplug AC Power Supply Kit	2
RAID 1	

Description	Quantity
AD2, Antivirus	
HP ProLiant DL320 G4 CTO Chassis	1
Smart Array P400i Controller	1
Quad-Core Intel® Xeon® Processor E3320 (2.5 GHz, 6MB L3 Cache, 80W, 1333, HT, Turbo 1/1/2/2)	1
2GB PC2-800 DDR II SDRAM,Advanced ECC	2
HP 250GB SATA 7.2K 3.5in DP ENT HDD	2
HP Slim 12.7mm SATA DVD Optical Kit	1
HP 128MB FIO P-Series Cache Module	1
HP NC326i PCI Express Dual Multifunction	2
HP 400W HE 12V Hotplug AC Power Supply Kit	1
RAID 1	
File Graphic	
HP DL380G4 CTO Chassis	1
Smart Array P400 Controller	
Intel® Xeon® Processor E5430 (2.66 GHz, 12MB L3 Cache, 80W, 1333, HT, Turbo 1/1/2/2)	1
HP 2GB 2Rx8 PC2-667 R-9 Kit	2
HP 146GB 6G SAS 10K 2.5in DP ENT HDD	2
HP 256MB FIO P-Series Cache Module	1
HP Slim 12.7mm SATA DVD Optical Kit	1
HP NC373i PCI Express Dual Multifunction	2
HP 400W CS HE Power Supply Kit	2
RAID 5	
File Server	
HP DL380G4 CTO Chassis	1
Smart Array P400 Controller	
Intel® Xeon® processor X5130 (2.0GHz, 95W, 4MB, 1333, HT, Turbo 1/1/4/4)	1

1GB PC3-667 R-9 DDR2 RDIMM	4
HP 72GB 6G SAS 10K 2.5in DP ENT HDD	3
HP 256MB FIO P-Series Cache Module	1
HP Slim 12.7mm SATA DVD Optical Kit	1
HP NC373i PCI Express Dual Multifunction	1
HP 400W CS HE Power Supply Kit	2
RAID 1	
Core Wireless SW	
Cisco 4402 Wireless LAN Controller	1
Access point	
Cisco Aironet 1130AG - radio access point	1
Tape Backup1	
HP storageWorks Ultrium 920	1

Description	Quantity
Proxy Server	
Dell PowerEdge T110	1
Smart Array P400 Controller	
Intel® Xeon® processor X3430 (2.4GHz, 95W, 8MB, 1333)	1
2GB PC3-1333 R-9 DDR3 RDIMM	2
HP 250GB 6G SATA 7.2K 3.5in HDD	2
Dell 16x SATA DVD + / - RW Drive Optical Kit	1
HP NC373i PCI Express Dual Multifunction	1
HP 400W CS HE Power Supply Kit	2
RAID 1	
Storage 1	
HP StorageWorks MSA60 Array ALL	1
Smart Array P800 Controller	
HP NC373 PCI Express Gigabit Server Adapter	1
HP 300GB 6G SAS 10K LFF (3.5-inch)	6
HP 1TB 6G SAS 7.2K LFF (3.5-inch)	6
HP NC382T PCI Express Dual Multifunction	2
RAID 5	
Storage 2	
Hitachi SMS 100 DSA800-RK iscsi	1
HP 720GB 6G SAS 10K LFF (3.5-inch)	12
HP NC382T PCI Express Dual Multifunction	2
RAID 6	
Storage Buffalo	
LinkStation Quad with 4x1TB 7.2K Raid 5 Network Attached Storage	3
LinkStation Quad with 4x1TB 7.2K Raid 5 Network Attached Storage	1
Buffalo Tara Station 4x2TB 7.2K Raid 10 Network Attached Storage	1

Core SW	
HP ProCurve Switch 5406zl Switch - Lifetime Warranty	1
Access SW	
HP ProCurve Switch 2610-24-PWR - Lifetime Warranty	1
Accessories	
CA Arc serve Backup r12 SERVER	1
SYMC Antivirus SERVER WIN PER SERVER BNDL STD LIC	1
EXPRESS BAND S ESSENTIAL 12 MONTHS	
Compaq w185q 18.5 inch LCD Monitor	1
HP Keyboard	1
HP Mouse	1

Description	Quantity
Firewall	
<p>Juniper Networks SSG 140</p> <p>The SSG 140 is available with 512 MB of DRAM. The SSG 140 can be configured with any combination of the following best-in-class UTM and content security functionality: Antivirus (includes anti-spyware, anti-phishing), IPS (Deep Inspection), Web filtering, and/or anti-spam. Four SSG 140 interface expansion slots support optional T1, E1, ISDN BRI S/T, ADSL2+, G.SHDSL and serial physical interface modules (PIMs), and 10/100/1000 and SFP universal PIMs (uPIMs).</p> <ul style="list-style-type: none"> • Delivers 8x10/100, 2x10/100/1000 • Configurable internal/DMZ/WAN ports • Support 32,000 concurrent sessions • Signature database 100,000 Protocols scanned POP3, HTTP, SMTP, IMAP, FTP anti-virus throughput • Easily accommodates the requirements of small enterprises and branch offices. • Unlimited user authentication 	1
UPS	
Liebert GXT2-3000RT230	1
Liebert GXT2-2000RT230	1
Liebert GXT2-1000RT230	1
Liebert GXT2-1000RT230	1
PODTM offers many benefits	4
Computer - Desktops (Model: Aspire MC605-214G1T00MGi/T006)	
<p>Processor 2nd Generation Intel® Core™ i3-2130 (3.4GHz, 3MB L3 Cache)</p> <p>Memory 4GB DDR3</p> <p>Harddisk 1TB SATA HDD</p> <p>CD-ROM DVD-SuperMulti</p> <p>Network 10/100/1000 Mbps LAN, Wireless LAN/Bluetooth</p> <p>Graphics ATI Radeon HD7470 2GB</p>	50

OS Dos	
Other Keyboard, Mouse, Acer Speaker	
Expandable 6 USB 2.0 Ports (Front 2, Rear 4)	
Printers	
HP Laserjet 1110	5
HP Laserjet 5200	10
Cannon IR-2550	4
Cannon ABF-02903	1
Scanners	
Cannon LIDE 100	3
Fujitsu FI-6130	2

Source: CCC Company (2009)