Developing a Knowledge Model to Support the Management of Hotel Customer Complaints

by

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LIST OF PUBLICATIONS

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'Does Gender Matter in Computer Mediated Communication Based Distance Education?', *International Journal of Diversity in Organisations, Communities and Nations*, vol 7, no 1, pp. 49-54, with M. Kim, 2007.

'What Competitive Approach Will Be More Practical to Small and Medium Sized Tourism Enterprises?' in *Proceedings of Council for Australian University Tourism and Hospitality Education (CAUTHE)*, Sydney, Australia CD 12 pages, with M. Kim, 2007.

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DECLARATION

I, Wusheng Zhang, declare that the PhD thesis entitled *Developing a Knowledge Model to Support the Management of Hotel Customer Complaints* is no more than 100,000 words in length including quotes and exclusive of tables, figures, appendices, bibliography, references and footnotes. This thesis contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, this thesis is my own work.

Signature

Date 23/06/2008

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ABSTRACT

This study aims to develop a better understanding on how the application of knowledge management can lead to the advancement of pragmatic support in the management of hotel customer complaints. This thesis formulates a hotel customer complaint management knowledge concept and develops a knowledge-enabled hotel customer complaint management model. The formulation of the knowledge concept and the development of the knowledge-enabled model are based on an empirical investigation through interviews with domain experts. These experts include both practitioners in the hotel industry and academics in hospitality management.

The representation of the knowledge concept and the knowledge-enabled model has adopted the object-oriented theory in conjunction with the use of the Unified Modelling Language (UML) to depict the concept and the model, and to facilitate the communication between the researcher, the interviewees and the readers. The knowledge concept consists of four subsets of knowledge such as: i) the dissatisfied customer complaint management knowledge, ii) the employee customer complaint management knowledge, iii) the supplier customer complaint management knowledge, and iv) the structured customer complaint management knowledge. The knowledge-enabled model contains concepts, objects and relationships that are pertinent to the application of knowledge management in hotel customer complaint management. The model promotes the application of the knowledge concept. The model has been discussed in relation to the operational perspective as well as the conceptual perspective.

The study makes contributions to the body of knowledge in both the theoretical and practical dimensions. The thesis illustrates what is hotel customer complaint management knowledge and how the knowledge is relevant to the management of hotel customer complaints. The thesis demonstrates that the object-oriented modelling approach is a useful knowledge management strategy. The thesis has also elucidated an innovative SQL-database approach in supporting qualitative data collection, analysis, and management.

CHAPTER 1: INTRODUCTION

1.1.Introduction

Research into the theory and practice of knowledge management in the domain of hotel customer complaint management is an emerging field of study. The theoretical background of the study is linked to both management and its related sub disciplines (i.e., knowledge management, customer complaint management, problem solving, and hospitality management), and information systems (i.e., information management, system thinking, and modelling). Fundamentally, this research questions how to apply the domain knowledge of hotel customer complaint management to support the management of hotel customer complaints. The goal is to lead to the advancement of pragmatic support.

The rationale of this study is that the application of knowledge management in this domain might potentially provide an effective means of support to the management of customer complaints for hotels. As such, the study has focused on investigating the knowledge attributes, objects, and relationships in the domain. It does so in order to construct a knowledge-enabled hotel customer complaint management model that promotes the application of hotel customer complaint management knowledge.

This chapter outlines the structure of the thesis and the nature of the problems to be addressed. The chapter sets the scene for the rest of the thesis. It provides background information to the research, and delineates the research objectives, research questions, methodologies and outcomes of the study.

1.2. Background to the Research

Customer complaint management is relevant to all products and service providers, since it is essential to maintaining a successful business. As Drucker (1973) has argued, the purpose of business is to create and then retain a satisfied customer. Similarly, Sheth and Mittal (2004) have pointed out that a business makes money only if it satisfies its customers by catering for their needs.

Businesses dedicate considerable money and resources to research on consumer behaviour research in an attempt to understand their target markets. Research into customer complaint handling and management has attracted researchers from various academic disciplines, including marketing (e.g., Fornell et al. 1984; Lovelock 1984), customer behaviour (e.g., Gilly & Gelb 1982), psychology (e.g., Brown & Leigh 1996), service management (e.g., Tax & Brown 1998), information management (e.g., Peacock 1995), and recently knowledge management (e.g., Bounchen 2002). Knowledge management research reports that hotel management is slow in adopting formal and systematic knowledge management practice and lacks the ability to plan strategic and practical progress.

As service-oriented organisations, hotels have different characteristics from production based industries. Lovelock (1991) has summarised six key characteristics of service including: i) the greater involvement of customers in the production process; ii) people as part of the product; iii) difficulties in maintaining quality standards; iv) the absence of inventories; v) the relative importance of time factors; and vi) the nature of service distribution channels. Unlike products, services are usually consumed, at the same time

as they are produced (Lovelock 1984; Hayes & Ninemeier 2004; Reid & Bojanic 2001; Stutts & Wortman 2006). Research (e.g., Boshoff 1997; Kelley et al. 1993; Palmer et al. 2000; Seider & Berry 1998) has indicated that in practice it is not always possible to meet customer expectations, and service failures do occur. It has also been documented in the current hospitality management literature (e.g., Denham 1998; Reid & Bojanic 2006; Walker 2006) that organisations which consistently meet or exceed customer expectations in service delivery can develop good reputations and lead to good quality images, which in turn leads to customer loyalty.

The failure to provide quality services to meet customer expectations will cause bad word of mouth publicity and also the potential to lose existing customers and develop the risks associated with escalating disputes. Appropriately managed customer complaint related knowledge might lead to competitive advantages for a hotel organisation in terms of enhanced capacity and capability concerning the management of customer complaints. In the knowledge management literature (e.g., Davenport & Klahr 1998; Davenport & Prusak 1998; Nonaka & Takeuchi 1995), it is suggested that the effective management of organisational knowledge can contribute to the attainment of sustainable competitive advantage for organisations that manage organisational knowledge systematically. With the evolution of a capital-based to a knowledge-based economy, knowledge has become a vital organisational resource and a key to business growth. A view of knowledge as a key firm resource focuses on the internal side of the firm's resources and capabilities, where differences between inter-firm performance occur through heterogonous access to valuable resources and can lead to competitive advantage (Fornell & Wernerfelt 1984; Barney 1991; Boisot 1998; Mahoney & Pandian 1992; Rumelt 1984). A competitive advantage based on resources and

capabilities is potentially more sustainable than the traditional approach based solely on product and market positioning.

Building upon the resource-based view of the firm, the knowledge-based view contends that knowledge is the key resource and the only one capable of creating a sustainable competitive advantage. In the knowledge-based view of the firm, internal resources and capabilities (such as know-how, customer knowledge, efficient processes, and expertise embedded in routines and practices that the firm transforms into valuable products and services) are the keys to achieving sustainable competitive advantage (Boisot 1998; Davenport & Prusak 1997; Grant 1996; Nonaka & Teece 2001; Teece 1998). Knowledge as an input to as well as an output of production is the most important resource in the knowledge-based view. The two views are interrelated in that knowledge has emerged as the most important organisational resource (Grant 1996; Nonaka & Takeuchi 1995; Spender 1996). Both the resource-based view and the knowledge-based view of the firm have advanced the discussion on competitive advantage, by acknowledging the proactive nature of business strategies.

In the hotel industry, the rapid development of information technology has promoted greater awareness of needs about applications of knowledge management. These needs are in terms of

    a.   increasing reliance on advanced technology to support business operations (Peacock 1995;Sheldon 1997);

    b.   the reliance on a large number of less skilled workers (Bounchen 2002);

    c.   high employment turnover rates (King et al. 1998; Stauss & Seidel 2004); and

d.   intensifying competition (Hoffman & Chung 1999; Reid & Bojanic 2001; Stutts & Wortman 2006).

To date, there has been little literature dedicated to knowledge management applications in the context of hotel customer complaint management. And the uptake of knowledge management applications in hotels appears to be slow. Additionally there is a lack of practical guidance on how knowledge management is relevant to the management of customer complaints in the hotel context. The present research is anchored in the belief with that advances in knowledge management applications may potentially provide hotels a competitive advantage.

In such circumstances, a better understanding of hotel customer complaint management knowledge will have significance for hotels both at a strategic level and a practical level. The effective management of hotel customer complaint management knowledge can potentially help hotels to compete in a more sustainable way, especially in the changing economic environment where knowledge has been treated as one of the most important organisational resources.

For these reasons, it is a rationale of the study that the application of knowledge management in the domain may potentially provide an effective means of supporting the management of customer complaints in hotels. The study aims at extending current customer complaint management research by adopting knowledge management applications and by modelling theories. As such, the study focuses on investigating knowledge attributes, objects, and relationships within the domain in order to construct a knowledge-enabled hotel customer complaint management model that promotes the application of hotel customer complaint management knowledge.

1.3. The Purpose and Objectives of the Research

The purpose of this study is to develop a better understanding of how the application of knowledge management can lead to the advancement of pragmatic support in the management of hotel customer complaints.

This study is a multidisciplinary research project into the investigation of the application of the hotel customer complaint management knowledge to the management of customer complaint in hotel settings. It answers the question of how the hotel customer complaint management knowledge can be used to support the management of customer complaints. In addressing the research question, the objectives of the study are two-fold:

ii)   to identify key knowledge management attributes, objects, and relationships that are pertinent to the application of a knowledge-oriented approach in hotel customer complaint management; and

iii)   to suggest a practical knowledge-enabled model to support the management of hotel customer complaints.

1.4. Contributions of the Research

This study contributes to the body of knowledge in three ways:

i)   It first provides a conceptual understanding of hotel customer complaint management knowledge and how the knowledge is relevant to the management of hotel customer complaints. The knowledge attributes, objects,

and relationships identified in this study have extended the application of knowledge management theory to the management of hotel customer complaints. In particular, the use of use cases and class diagrams to communicate between the researcher (the modeller), the interviewees, and the readers has further illustrated that the object-oriented system development theory can be applied not only to support the development of computer software systems but can also provide a useful facility for dialogue. In relation to the application of modelling theories to knowledge management, this study has illustrated that the object-oriented modelling theory can be a knowledge management strategy in terms of providing instruments for knowledge management applications.

ii)   Knowledge artefacts such as the hotel customer complaint management knowledge concept and the knowledge-enabled hotel customer complaint model are practical applications of knowledge management within the domain of hotel customer complaint management. The researcher has also formulated a set of future research questions that are a valuable contribution for an exploratory study (refer to section 8.4 for details). The hotel customer complaint management knowledge concept and the knowledge-enabled model developed in this thesis are reusable artefacts that can be directly or indirectly applied to support hotels in adopting a knowledge-oriented approach to the management of customer complaints. This research also contributes to the hotel industry in terms of providing a practical guide and an alternative model to support the adoption of knowledge management applications.

iii)   The design and use of a purpose-built database and the Structured Query Language (SQL) for the support of qualitative data collection, analysis, and management is innovative and exploratory. It shows great potential in terms of providing an enhanced capacity for a researcher to compare and categorise qualitative data such as interview data. This study also provides new insights into the role and relationships of information systems with other academic disciplines.

This research is confined to the selection of empirical data. Respondent employees were drawn from full service chain hotels. Academics were interviewed in hospitality management. The interviews are aimed to gain a better understanding of organisational customer complaint management and knowledge management practices and issues in the hotel industry. The hotel industry has been chosen as the target domain because of the large quantity of information that is publicly available, which allowed the researcher to carry out an in-depth empirical study on relevant companies. Practical access to other sectors as well as costs and time associated with more extensive travel were further research constraints.

1.5. Overview of Research Design and Methods

This study investigates the potential knowledge management applications in the domain of hotel customer complaint management, in order to provide conceptual guidance. This research is focused on the theory building stage rather than theory testing and refinement (refer to chapter 4 for more details).

Due to the exploratory and theory-building nature of this study, an interpretative-qualitative methodology has been used to achieve the aforementioned research purpose and objectives. Data collection, analysis, and interpretation are used to support the knowledge concept formation and the construction of the knowledge-enabled model.

A semi-structured interview method was chosen for data collection, since it is well suited in cases where:

a)   a better understanding of contemporary phenomena requires investigations performed in a real-life context; and

b)   existing theory seems inadequate (Saunders et al. 2007; Yin 2003).

The study therefore investigates real-world customer complaint management practices: including lessons leaned and best practices for supporting the development of a knowledge-enabled hotel customer complaint management model. The data analysis process employs a set of qualitative analysis methods by classifying interview texts into meaningful themes or categories. Many researchers have studied this approach (e.g., Charmaz 2006; Miles & Huberman 1993; Strauss & Corbin 1998). Also, this research has used SQL and a purpose-built database to assist in analysis of the interview data (refer to section 5.3 for details).

An iterative and incremental approach has been adopted to develop an understanding of the domain at both the conceptual and operational perspectives. This is a notable feature of the object-oriented approach (see Dillon et al. 1993; Fayad et al. 1999; Graham 2001). The research has also been evaluated in relation to the research process and outcomes.

1.6. Thesis Structure

The thesis is organised into eight chapters.

Chapter one is an introduction to the research.

Chapter two begins with a review of the theoretical foundations of knowledge management and its applications. The chapter lays the theoretical foundation for the research through a review of the existing literature including the resource-based view and knowledge-based view of the firm (refer to section 2.2 for details), knowledge and knowledge management (refer to section 2.3 for details).

The theoretical review also covers the object-oriented theory including the Unified Modelling Language (UML) (refer to section 2.4 for details) which have been adopted to represent hotel customer complaint management knowledge (refer to chapter 5 for details) and the knowledge-enabled hotel customer complaint management model (refer to chapter 6 for details).

Chapter three reviews the theories and practices of hotel customer complaint management in terms of organisational structure (refer to section 3.2 for details), operating environment (refer to section 3.3 for details), and the notion of customer complaint and management (refer to section 3.4 for details), and service management approaches (refer to section 3.5 for details).

Chapter four outlines the interpretative and qualitative focus of the research methodology. The chapter firstly explains the philosophical assumptions of the study

(refer to section 4.2 for details). It then moves to the justification of the selection of qualitative methods (refer to section 4.3 for details). Following a discussion of the design (refer to section 4.4 for details), data collection (refer to section 4.5 for details), empirical data analysis (refer to section 4.6 for details), modelling (refer to section 4.7 for details), and evaluation (refer to section 4.8 for details). The methodology chapter also considers the relevant ethical considerations (refer to 4.9 for details) of the research

Chapter five illustrates how the interview data was collected, analysed, and interpreted to support the formation of the hotel customer complaint management knowledge concept and the knowledge-enabled hotel customer complaint model. An analysis and interpretation of the interview data was assisted by using the Structured Query Language (SQL) and a purpose-built database. The interview data was firstly described (refer to section 5.2 for details), and then analysed and interpreted (refer to section 5.3 for details), and finally conceptualised (refer to section 5.4) to support the formation of the hotel customer complaint management knowledge concept and the knowledge-enabled hotel customer complaint management model.

Chapter six introduces the knowledge-enabled hotel customer complaint management model with both the operational perspective (refer to section 6.2 for details) and the conceptual perspective (refer to section 6.3 for details). The object-oriented theory and the UML have been adopted to represent the model. This study has extensively used Use Case Diagrams and Class Diagrams to enhance the communication between the researcher, the domain experts, and the readers alike. The knowledge-enabled model promotes the application of hotel customer complaint management knowledge in terms

of knowledge identification, creation, storage, sharing, and use to support the management of hotel customer complaints.

Chapter seven evaluates and discusses the research progress in terms of the research methodology and the research outcome.

Chapter eight first summarises the thesis (refer to section 8.2 for details); then moves on to discuss the implications (refer to section 8.3) of the research. The chapter will also discuss future research relating to this research project (refer to section 8.4 for details).

1.7. Chapter Summary and Conclusions

This chapter introduced the research background, the purposes and objectives of the research, the contribution of the research, the limitation of scope of the research and the research methodology employed for the research. The chapter also included a brief description on the topics covered in each chapter.

In the next chapter, the thesis will discuss the theoretical background of the study through a review of existing literature. It will draw multiple inferences from related disciplines.

CHAPTER 2: THEORETICAL FOUNDATIONS OF KNOWLEDGE MANAGEMENT AND OBJECT-ORIENTATION

2.1.Introduction

This chapter reviews the theoretical foundations relating to knowledge management and object-oriented modelling. The review of the theory of knowledge management is developed to support and inform the formulation of the hotel customer complaint management knowledge (refer to chapter 5) and the knowledge-enabled hotel customer complaint management model (refer to chapter 6).

A number of researchers have proposed or identified knowledge management structures (e.g., Earl 2001; McAdam & McCreedy 1999; Nonaka & Takeuchi 1995). Recently, two different knowledge management approaches have evolved. According to Mentzas et al. (2003), the first approach is product centred and results from the pragmatic gathering of knowledge and its representatives. It is basically concerned with the creation and use of knowledge artefacts within a company. The second, more process centred approach regards knowledge management as related to stepwise fulfilment of tasks by different collaborating knowledge workers.

Research (e.g., Fahey & Prusak 1998; Krogh 1998; Sarvary 1999) has shown that knowledge management is a process through which organisations generate and use their institutional and collective knowledge. Davenport and Prusak (1998) have explained that knowledge management process is about acquisition, creation, packaging and application or reuse of knowledge.

Despite the popularity of knowledge management in other industries, the application of knowledge management in hotels has appeared to be rudimentary and neglected in the literature (Bounchen 2002). Research (see Clark & Scott 2006; Cooper 2005) has claimed that there is a greater need for tourism and hospitality organisations to use the notion of knowledge and manage organisational knowledge. The present research advances our understanding of the relevance of knowledge management process to the management of hotel customer complaints. The object-oriented theory and the unified modelling language (UML) have been adopted to represent and communicate the hotel customer complaint management knowledge and the knowledge-enabled model.

The proponents of the object-oriented theory view the world as related through interacted objects (Coad & Yourdon 1990). The process of interaction and message passing between different objects can change the status of the objects. The notion of message passing allows for a dissatisfied customer to become satisfied through an interaction (e.g., compensation, or explanation, or apology, or a combination of such) between the dissatisfied customer and a hotel. Although the object-oriented theory is derived from object-oriented programming and software system design, it has recently been used widely in business analyses.

Originally the notion of object-orientation related to the way software code was constructed, in contrast to the then popular structured programming techniques. Recently, object-oriented theory has become the mainstream approach for supporting software system design and coding. Today, major software platforms used in industry, such as Enterprise Java, IBM-Rational, and Microsoft.Net framework, are all object-oriented.

This research uses object-oriented principles to represent and communicate the knowledge concept and the knowledge-enabled model. The Unified Modelling Language (UML) has been adapted as the modelling notation language to depict the concept and the model (refer to section 2.4 for details).

2.2. The resource-Based View and the Knowledge-Based View of the Firm

Knowledge has become a vital organisational resource. It is the key to business progress and economic growth (Drucker 1994). The view of knowledge as a key firm resource focuses on the internal side of the firm's resources and capabilities. One of the basic propositions of the resource-based view of the firm is that firms differ in the extent of their resource endowments (see Barney 1991; Wernerfelt 1984). The resource-based view argues that inter-firm performance differences occur through heterogonous access to valuable resources. This creates isolating mechanisms representing entry barriers at the industry level and mobility barriers at the industry group level that sustain the firm's competitive advantage (Mahoney & Pandian 1992; Rumelt 1984).

In the resource-based view, knowledge resources are highly valuable, unique to the organisation, difficult to copy and substitute and can lead to competitive advantage (Barney 1991; Boisot 1998). According to Porter (1985), a competitive advantage based on resources and capabilities is potentially more sustainable than the traditional market-based approach. A market-based approach concerns the organisation's environment. It focuses on selecting an attractive industry and positioning an

organisation attractively within this industry through one of the two generic strategies: cost-leadership or differentiation. The market-based approach has been criticised in its extreme form, because it is based solely on market positioning. The consideration of organisational resources occurs primarily in the implementation phase.

Building on the resource-based view of the firm (Barney 1991; Grant 1991; Wernerfelt 1984), the knowledge-based view of the firm contends that knowledge is the key resource and the only resource capable of creating a sustainable competitive advantage. In the knowledge-based view of the firm, internal resources and capabilities such as know-how, customer knowledge, efficient processes, and expertise embedded in routines and practices that the firm transforms into valuable products and services are the keys to achieving sustainable competitive advantage (Boisot 1998; Davenport & Prusak 1997; Grant 1996; Teece 1998). Knowledge as an input to as well as an output of production is the most important resource in the knowledge-based view.

Both the resource-based view and the knowledge-based view of the firm have advanced the discussion on competitive advantage by acknowledging the proactive nature of firms' strategies. The two views are interrelated in that knowledge has emerged as the most important organisational resource (Grant 1996; Nonaka 1994; Spender 1996). Knowledge is the essential enduring resource for firms (Penrose 1959; Nelson & Winter 1982; Wernerfelt 1984). This is because organisational knowledge, as suggested by Bollinger and Smith (2001), is a strategic asset which is valuable, rare, non-substitutable and inimitable by competitors. It gives a firm a sustainable competitive advantage. Knowledge, if properly harnessed and leveraged by an organisation will enable it to stand out in the competition and outperform its rivals, thus maintaining its competitive edge. The development of this view requires a good understanding of what

is the knowledge within a firm and how to apply such knowledge to support the management of the firm.

2.3. Knowledge Management Approaches

2.3.1. What Is Knowledge

The many different definitions of the term knowledge lead to different perspectives on organisational knowledge and thus to different concepts of interventions into an organisation's way of handling knowledge. Knowledge has been categorised as existing in a collection of forms such as: practical, intellectual, small talk, spiritual and unwanted (Machlup 1980); symbolic, embodied, embrained and encultured (Collins 1993); core, advanced and innovative (Zack 1999a). Some classifications of knowledge use a dichotomy to describe one type of knowledge and its opposite such as codified versus personalised knowledge (Zack 1999b) and tacit versus explicit knowing (Polanyi 1966). The effectiveness of knowledge management relies on the ability of an organisation to use the right combinations of knowledge management activities. Related concepts include intellectual capital or knowledge assets, organisational competencies (Prahalad & Hamel 1990) and organisational capabilities (Kogut & Zander 1992; Kogut & Zander 1995; Teece et al. 1997).

According to Leonard-Barton (1995), there are four core capabilities of a firm:

a) physical systems - competencies accumulated in material systems that are built over time such as databases, machinery, and software;

b) employee knowledge and skills;

c) managerial systems - organised routines directing resource accumulation and deployment creating the channels through which knowledge is accessed and flows such as education, reward, and incentive systems; and

d) the organisation's values and norms determining the kinds of knowledge sought and nurtured, and the kinds of knowledge-building activities tolerated and encouraged within an organisation.

These four organisational core capabilities represent dynamic knowledge pools and the resources to manipulate them from the first two, and knowledge-control or channelling mechanisms from the last two.

Organisations are also generators of dynamic capabilities that emphasise the key role of strategic management in appropriately building, integrating and reconfiguring internal and external organisational skills and resources to match emerging environmental opportunities (Teece et al. 1997). Dynamic capabilities are rooted in high performance routines operating inside the firm, embedded in processes and conditioned by organisational history. Organisations serve both as sources of new combinations and provide a stable hierarchy of path-dependent routines and capabilities that are continuously replicated (Kogut & Zander 1992). Replication mechanisms bring stability and continuity, whereas routines serve as organisational memory.

The creation of knowledge will always be conceptualised in the framework of old established routines. These can be dynamic or static. Static routines replicate organisational and technological capabilities and dynamic routines enable the firm to learn by creating, transferring and integrating knowledge. The organisational routines are activities that are required when firm specific knowledge and resources are assembled in integrated clusters to enable distinctive activities to be performed (Teece

et al. 1997). Such capabilities are valuable, rare, and idiosyncratic. They are hard to imitate and define the firm's fundamental business. Tacit knowledge and organisational memory reside in an organisation's structure via the routines that the organisation maintains (Cyert & March 1963; Nelson & Winter 1982). Such capabilities are also potential core competencies.

Core competences or distinctive capabilities are combinations of resources and capabilities unique to a specific organisation and generate a competitive advantage. The competitive advantage is based on firm specific core competencies or distinctive capabilities in which knowledge acts as the foundation for competence development and leveraging (Prahalad & Hamel 1990). Consequently, such competence building and leveraging is essentially knowledge based. By its very nature, tacit knowledge is complex and difficult to imitate, playing a role in building, leveraging, and conserving core competencies.

2.3.2. Hierarchies of Knowledge

Many authors have avoided an epistemological debate on the definition of knowledge, by comparing knowledge with information and data. Data, information, and knowledge are not interchangeable concepts. Watson (1998) has described data as a collection of facts, measurements, and statistics. There is no inherent meaning in data. In organisations, data may be the raw material used in decision-making, but data represents only structured records of transactions.

Information is different from data because it has meaning. Drucker (1994) has noted that information is data endowed with relevance and purpose. Watson (1998) has also

claimed that information is organised or processed data that is timely (i.e. inferences from the data are drawn within the time frame of applicability) and accurate (i.e. with regard to the original data). Jonscher (2000) describes information as data interpreted by the person who is being informed. Information, then, can be thought of as a message that is intended to have an impact on the receiver. Knowledge resides in the user's subjective context of action based on information (Nonaka & Takeuchi 1995). It is the social construction element of information that has important consequences for knowledge constructs.

Knowledge has been discussed as something that is actively constructed in a social setting (Wenger et al. 2002). Group members produce knowledge by their interactions, creating a group memory. Social constructivism views knowledge not as an objective entity but as a subjective, social artefact (Berger & Luckmann 1967). Social constructivists argue that knowledge is produced through the shared understandings that emerge through social interactions.

As individuals and groups of people communicate, they mutually influence each other's views and create or change shared constructions of reality. This perspective views knowledge as context dependant and thus as something that cannot be completely separated from the people that hold the knowledge. The context helps distinguish between knowledge and information. The implication is that knowledge has strong experiential and reflective elements that distinguish it from information in a given context. Having knowledge implies that it can be exercised, for example to solve a problem, whereas having information does not carry the same nuance. An ability to act is an essential part of being knowledgeable. For example, two people in the same context with the same information may not have the same ability to use the information

to the same degree of achievement. Hence there is a difference in the human capability to add value.

Knowledge is not a radically different concept from information, rather information becomes knowledge once it is processed in the mind of an individual. In effect, understanding what data, information, and knowledge are and how to get from one to another, could be the quintessence of knowledge management initiatives. In contrast to the often assumed hierarchy from data to information to knowledge, Tuomi (1999) has argued an alternative inverse view, namely that knowledge must exist before information can be formulated and data can be measured to form information. In other words, raw data does not exist in prior thought and knowledge processes are always employed in identifying and collecting even the most elementary data. Tuomi has also stated that knowledge exists which, when articulated, verbalised and structured, becomes data. The important point of this argument is backed up by the fact that knowledge does not exist outside of the person having the knowledge and it is indelibly shaped by one's needs as well as one's stock of knowledge. Nevertheless, the hierarchical view of data, information and knowledge has been and will have a continued influence on the management of knowledge.

2.3.3. Types of Knowledge

Aside from the hierarchical view of knowledge, researchers seem to agree that there are two types of knowledge, with a strong distinction being made between explicit and tacit knowledge. Explicit knowledge is knowledge, which can be expressed in words and can be easily communicated and shared in the form of hard data, scientific formulae, codified procedures or universal principles. It can be found in the documents of an

organisation such as reports, articles, manuals and patents as well as software and pictures. It can also be found in the representations that an organisation has of itself such as organisational charts, process maps, mission statements and domains of expertise.

As opposed to explicit knowledge, which is knowledge that is readily communicable and easy to transfer, tacit knowledge is more difficult to express to others (Polanyi 1966). Tacit knowledge cannot be easily codified and can only be learned through observation and practice (Grant 1996; Kogut & Zander 1992). The problem of tacit knowledge, its acquisition and epistemic status has been the focus of considerable philosophical investigation. Michael Polanyi in 1962 first developed the notion of tacit knowledge based on the observation that we know more than we can say. He (1962) argued that a large part of human knowledge is occupied by knowledge that cannot be articulated, that is tacit knowledge. According to Polanyi (1973), tacit knowledge is personal knowledge that is hard to formalise or articulate, embedded in individual experience and is shared and exchanged through direct, face-to-face contact. It is a type of knowledge that people believe that can only exist in the human mind.

Tacit knowledge has been discussed with regard to organisational routines. Nonaka (1994) has argued that tacit knowledge is deeply rooted in action, commitment and involvement in a specific context. Tacit knowledge resides in individuals. To be useful, it must be integrated into the organisation's rules and routines. Tacit and explicit knowledge can range from highly tacit to fully articulatable knowledge and should be rooted in organisational coordination mechanisms and routines. Nonaka and Takeuchi (1995) expound this views in their book *"The Knowledge-creating Organisation"*, indicating that tacit knowledge becomes explicit through the process of externalisation.

This means that even tacit knowledge can be transformed to explicit knowledge by a sharing of metaphors and analogies during social interaction.

2.3.4. Different Perspectives of Knowledge Management

Knowledge management is a broad and developing field of study represented in a range of topics such as organisational science, cognitive science, linguistics and computational linguistics, information technology, information and library science, anthropology and sociology, and communication studies. This has resulted in an enormous output of writing and research in a proliferation of perspectives, methods, systems, frameworks and models all purporting to explain knowledge management or some part of it (e.g., AP&QC 1996; Argyris & Schon 1978; Bohn 1994; Brooking 1996; Demarest 1997; Earl 2001; Eccles 1991; Edvinsson & Malone 1997; McAdam & McCreedy 1999;Meyer & Zack 1996; Nonaka & Takeuchi 1995; Norton 1996; Roos 1998; Sveiby 1997; Wiig 1993; Zack 1999a).

Despite the vast amount of research about knowledge management conducted in the last decade, there is little consensus regarding its definition. Some authors simply avoid the term completely, preferring to focus on specific aspects of the topic such as knowledge, innovation or learning (Costello 1996). The debate on the nature of knowledge management has been generally around two-school of thoughts, those focusing on information systems/technology and those focusing on general management issues. There are likely four distinct perspectives:

a) organisational learning,

b) process,

c) information technology, and

d) strategy

on knowledge management. Each perspective leads to a different definition of knowledge management.

One way to define knowledge management can be traced in the concepts of organisational learning and organisation memory. When members of an organisation collaborate and communicate ideas, teach, and learn, then knowledge is transformed and transferred from individual to individual. The term learning organisation refers to an organisation's capability to learn from its past experience (Dibella 1995). Before an organisation can improve, it must first learn. If knowledge management is seen as organisational learning as the process of internalising and converting information to knowledge, simply delivering or pushing information to the user's desktop may not be an effective knowledge management strategy (Manville & Foote 1996). This is due to the scarcity of user attention required for processing this information and converting it to knowledge. In addition to the provision of the necessary information (the raw material for knowledge creation), individuals should be motivated to convert it into knowledge by learning and internalising the information. Consequently, knowledge is created and shared on the basis of pull by individuals and not a centralised technology-enabled push of information to desktops.

A learning organisation must have an organisation memory and a means to save, represent, and share the organisational knowledge. Thus, establishing a corporate memory is critical for success (Brooking 1999). The learning organisation is one that performs five main activities:

a) systematic problem solving,

b) creative experimentation,

c) learning from past experience,

d) learning from the best practices of others, and

e) transferring knowledge quickly and efficiently throughout the organisation (Garvin 1993).

When faced with issues or problems to be solved, individuals ideally tap into this memory for both explicit and tacit knowledge. Human intelligence draws from the organisational memory and adds value by creating new knowledge. Information technology plays a critical role in organisational learning and management must place emphasis on this area to foster it. A knowledge management system can capture the new knowledge and make it available in an enhanced form.

Along with the organisational learning approach to knowledge management, the process approach has also been well accepted by researchers. The process approach refers to a procedure through which organisations generate and use their institutional and collective knowledge (e.g., Fahey & Prusak 1998; Krogh 1998; Sarvary 1999) whereas Davenport and Prusak (1998) explain that knowledge management process is about acquisition, creation, packaging and application or reuse of knowledge. Similarly, Brown and Duguid (1991) have viewed knowledge management as a systematic process of finding, selecting, organising, and presenting information in a way that improves a user's comprehension and use of business assets.

The goal of knowledge management as a process is to improve the organisation's ability to execute its core processes more efficiently: eliminating the need to continuously reinvent ways to accomplish a task. Managing knowledge thus goes much further than just capturing data and manipulating it to obtain information. The implication is that knowledge management is not only about managing the knowledge

asset but also managing the processes that act upon the asset. Accordingly, detailed knowledge of the processes enables workers to optimise procedures.

Davenport and Prusak (1998) have stated that knowledge management is a compelling new information technology that can help organisations leverage their knowledge capital for increased competitive advantage. It can endeavour both to capture explicit and tacit information and knowledge that exists in the organisation, usually in the minds of employees, in order to advance the organisation's mission. DiMattia and Oder (1997) have suggested that knowledge management involves blending a company's internal and external information and turning it into actionable knowledge via technology platform. A study from AP&QC (1996) shows that organisations embarking in knowledge management efforts generally rely, for accomplishing their goals, on the setting up of a suitable information technology infrastructure. There is an ongoing debate about the danger that technology driven knowledge management may end up objectifying knowledge into static and inert information thus neglecting the overall role of tacit knowledge.

Knowledge management can be defined in terms of the use of knowledge for competitive advantage. In this regard, knowledge management is viewed as a strategy for effectively managing knowledge. When used wisely, it can confer strategic or competitive advantage on an organisation (Grant 1991). To use knowledge management for competitive advantage requires both strategy formulation and strategy execution. Knowledge management involves a strategic commitment to improving the organisation's effectiveness. Stewart (1997) has argued that a goal of managing knowledge can be optimising organisational performance. However, the optimisation

of organisational performance will not be achieved alone, but within the prime contexts of people, business strategy, knowledge, organisational milieu, and technology.

Combing the four perspectives from the literature, knowledge management refers to a systematic and integrative process of co-ordinating organisation-wide activities of acquiring, creating, disseminating, and using knowledge by individuals and groups. Organisational knowledge activities are part of the organisation's repository and that typically resides within the organisation through information technology where possible to achieve organisational goals. The conduct of knowledge management in an organisation involves manoeuvring organisational knowledge through executing knowledge management activities that operate on the organisation's knowledge resources. Firms must intentionally and strategically manage not only knowledge but also its activities that manage the knowledge. Thus, it is essential to examine knowledge management activities.

2.4.Object-Oriented Theory

2.4.1. Object-Oriented Modelling Principles

The basic object-oriented modelling construct of an object builds on the concept of an imaginary actor, as originally proposed by Kay (1984), where an actor is any object that behaves in predefined ways. Actors can be used to model real objects, but they can also be used to model imaginary objects that represent people's ideas. An actor view of modelling is based on the idea that a description of data with its permissible operations should be combined into an actor or knowledge frame. The frame based approach is one of the major knowledge modelling approaches developed among logic based

approaches (see Kowalski 1979) and production rules based approaches (see Buchanan & Shortlife 1984) first developed in the 1970s.

In Minsky's (1975) seminal work *"A framework for presenting knowledge"*, he views a frame as a structure for holding a collection of interrelated knowledge about a concept, a physical object, a system state or an event. It is a very effective way to model knowledge of a stereotyped object and to communicate the concepts and the processes of a problem domain amongst a modeller and experts. The object-oriented approach has become widely acceptable by both business modelling and systems development communities since the 1990s.

An object-oriented conceptual modelling approach can model not only the taxonomy relationship of a problem domain, but also how the value and status of an object can be altered through message passing between objects. An object is a building block of any models in object-oriented modelling. Coad and Yourdon (1990) have depicted that an object is an abstraction of something in a problem domain, reflecting the capabilities of the system to keep information about it, interact with it or both. In that sense objects are used to model an understanding of the application domain. The object-oriented modelling approach provides not only a categorisation for a knowledge domain, but also processes that support the use of the knowledge through communication. In object-oriented modelling, the communication among objects is achieved through message passing between each object.

This research project has adopted the notion of abstraction, generalisation & specialisation, and polymorphism to represent the concept of hotel customer complaint

management knowledge, and the knowledge-enabled hotel customer complaint management model.

Abstraction is one of the principal concepts of the object-oriented modelling theory. It aims to reduce details required for models. The notion of abstraction is related to developing a line of thought from a concrete reality to a general principle or an intellectual idea; a concept or term that does not refer to a concrete object but that denotes a quality, an emotion, or an idea. A closer working definition of abstraction defined by Graham (2001, pp17.) as *"representing the essential features of something without including background or inessential detail"*. The main benefit of the application of abstraction is the expertise which can be reused. The notion of abstraction permits a modeller to develop a description of a complex domain problem by only retaining the features that are of direct relevant to the phenomena being modelled. Thus, the notion of abstraction provides a useful facility for knowledge modelling, not only at an operational perspective, but a conceptual perspective. The operational perspective of a model is concerned with the usefulness of a model. By contrast a conceptual perspective of a model is concerned with the understanding the abstraction of concepts in a given problem domain.

Generalisation & specialisation describe logical relationships between objects. Fowler (1997) has stated that generalisation is a taxonomic relationship between a more general element and a more specific element that is fully consistent with the general element and that adds additional information. Specialisation on the other hand, is the refinement of an abstraction by adding additional features. The generalisation and specialisation hierarchy is one of the most powerful tools of abstraction used in object-oriented modelling. It allows representing taxonomic relationships among objects. The

taxonomy denotes a scheme of hierarchic classifications, which can be either an applied set of classifications or the principles by which that set is constructed. The object oriented modelling approach uses generalisation & specialisation techniques to realise abstraction.

A thorough understanding of the relationship between generalisation & specialisation is important as it allows a modeller to classify objects and develop a hierarchy. For instance, when modelling an employee-manager relationship, an employee object is a generalisation, which contains properties of employee id and employee name, and maybe other properties such as date of appointment, date of birth and line manager. A manager object has not only all of the properties of the employee object but with added responsibilities. This classification is particularly important for modelling both business rules and the responsibilities within a hierarchy in a hotel organisation. By realising the generalisation & specialisation hierarchy, the object-oriented approach provides a useful mechanism to define business rules in order to let certain employees have delegated rights to overwrite business rules in order to make dynamic decisions in appropriate situations. For example, if an employee cannot find the rules to support the handling of a particular customer complaint case, then the employee can refer the case to the manager who can overwrite the rules according to the hotel complaint handling policy. The specification & generalisation hierarchy model allows a hotel to define the responsibility with a predefined organisational structure. In other words, the application of a new initiative does not necessarily involve a process of organisation reengineering, but can occur simply by adding or deleting responsibilities of the employees.

Polymorphism refers to the ability of different objects reacting to certain messages differently. Graham (2001, p16.) has defined polymorphism as *"the ability to use the*

same expression to denote different operations". By using the polymorphism mechanism, a modeller can model the actions of different employees take when a customer raises a complaint. This mechanism models the different reactions of employees according to the scope of their responsibilities.

For modelling complaint handling processes, the polymorphism notion permits a complaint management system (regardless whether it is a computerised system or a manual system) to pass different messages or commands to different employees by the same trigger event (e.g., recording a customer complaint). An event such as recording complaint data (e.g., the report of a dirty bed sheet in a guest bathroom) can instantaneously generate messages to the housekeeping department, the accounting department, and maybe even to an assistant manager. Who receives the message depends on the existing business rules. For example, when a customer complaint relating to a dirty bed sheet has been reported, then messages may be communicated to:

i)   the housekeeping department-asking for changing the sheet within a timeline;

ii)   the accounting department-asking for calculating and adding the expense of the transaction to the service provider who has provided the dirty bed sheet if this is deemed as the responsibility of the service provider; and

iii) the assistant manager- a warning message if the related incidents reach a predefined level.

By applying the notion of polymorphism a modeller can model the effects of actions taken by different objects involved. This is particularly useful to model the different behaviours of people involved in a complaint management scenario.

2.4.2. UML Modelling Notation

The modelling notations used in this thesis are based on the Unified Modelling Language (UML). The UML is a graphic modelling language managed by Object Management Group, an open consortium of companies. The UML was evolved out of the unification of many object-oriented graphical modelling languages in the 1980s and 1990s. The UML provides users with a set of graphical communication tools to support conceptual modelling and system development (see Booch et al. 1999; Fowler 2004; Maciszek 2001; Quatrani 2003; Rosenberg & Scott 1999; Schach 2004; Scott 2001).

The UML represents a description of the concepts of a domain of study that allow a modeller to build a vocabulary with which to communicate about a particular domain with domain experts. This research has adapted the UML with a conceptual perspective to represent and communicate the domain knowledge and model.

The UML is of relatively open standard as most of the users understand the modelling rules by looking at how other users use the language in practice. Thus it is descriptive in nature. Wherever appropriate, the notations used in this thesis have been annotated to enhance the quality of communication between the modeller (the researcher), the interviewed domain experts, and the readers.

2.5. Chapter Summary and Conclusions

This chapter first reviewed the resource-based view and the knowledge-based view of the firm. These views promote the utilisation of organisational knowledge for creating competitive advantage. The chapter then discussed the notion of knowledge,

knowledge management, and knowledge management approaches. This chapter also reviewed the principles of the object-oriented theory and the UML notation.

The resource-based view argues that inter-firm performance differences occur through heterogonous access to valuable resources, where as the knowledge-based view contends that knowledge is the key resource and the only resource capable of creating sustainable competitive advantage. Both the resource-based view and the knowledge-based view of the firm have advanced the discussion on competitive advantage by acknowledging the proactive nature of firms' strategies. In this context, knowledge has been viewed as a firm's capacity, competency, and learning ability. These are more sustainable compared to the traditional capital-based competition.

Knowledge can be tacit or explicit. It has been argued in the literature that tacit knowledge becomes explicit through the process of knowledge management activities, for example externalisation. Despite the lack of consensus on the definition of knowledge and knowledge management, there are some general perspectives that have been widely discussed, including organisational learning, process, information technology, and strategy.

This study views knowledge management as a systematic and integrative process of co-ordinating organisation wide activities of acquiring, creating, disseminating, and using knowledge by individuals and groups. Organisational knowledge management activities are part of the organisation's repository and that typically reside within the organisation through information technology where possible to achieve organisational goals.

This chapter also discussed the object-oriented theory and the UML notation that has been adopted to represent the hotel customer complaint management knowledge concept and the knowledge-enabled model. The object-oriented theory views that the world is related through object. Object-oriented modelling focuses on finding and describing the objects, concepts, and relationship in a problem domain. The object-oriented modelling approach provides the facilities to model a domain: not only the static aspects such as objects and attributes, but also dynamic aspects such as message passing and change of status of objects. This study has adopted the notable object-oriented principles such as abstraction, generalisation & specialisation, and polymorphism. The chapter also briefly discussed the UML notation that the study has applied to improve the communication between the researcher, the interview participants, and the readers.

The next chapter will review the domain background on hotel customer complaint management.

CHAPTER 3: COMPLAINT MANAGEMENT IN HOTELS

3.1.Introduction

The previous chapter reviewed the theoretical foundations behind this research. This chapter analyses and examines the current literature relating to the domain of hotel customer complaint management.

Hotel customer complaint management spans a wide range of academic disciplines including management and marketing and their sub disciplines such as

a) service management (e.g., Gronroos 2000);

b) hospitality management (e.g., Hayes & Ninemeier 2004; Reid & Bojanic 2006);

c) consumer behaviour (e.g., Berkman & Gilson 1986; Goodwin & Ross 1992; Parasuraman et al. 1988; Namasivayam 2004);

d) information technology (e.g., Lam & Dale 1999; Rose & Sugumaran 2003);

e) relationship management (Gummesson 2002; Piccoli et al. 2003); and

f) knowledge management research (e.g., Bounchen 2002).

The multidimensional and multifaceted research outcomes from various related academic disciplines are a valuable secondary source of this research in terms of supporting the formulation of the hotel customer complaint management concept and the knowledge-enabled hotel customer complaint management model.

3.2.Organisational Structure of Hotels

The definition of a hotel is closely related to understanding its organisational structure. It is often defined as an accommodation establishment offering guest rooms, food and beverage, and amenities to guests (Casado 2000). In Australia, hotel is an establishment focusing on the supply of liquor to the public for use on the premises, with food and accommodation provisions as ancillary activities (refer to McGuire 1952) for further information). Internationally, the main purpose of a hotel is generally regarded as the provision of overnight accommodation to travellers. The supply of food, beverage and other services are secondary. This customarily defined term has influenced the understanding to the term being used in Australia and the international description is now enjoys greater public acceptance.

The hotel is an integral part of the hospitality industry cluster. Hotels can range from five star full service exclusive upmarket establishments to owner operated boutique accommodation establishments that have no star ratings and offer limited food and beverage, and amenities services. Depending to the type of services being provided, hotels may be classified as limited or full service hotels (Hayes & Ninemeier 2004; Jones & Newton 1997; Stutts & Wortman 2006). In Australia a customer can expect a full service hotel to at least provide room service, food and beverage services, and some ancillary services. In Australia, many small and medium sized hotels provide full services. Whether a hotel provides full or limited services is more relevant to the nature of the targeting market than its size.

Hotel management structures vary depending on the type and the size of a hotel establishment, and other factors such as management styles. Typically hotels organise

their functional areas into departments. Functional departments within a typical limited service hotel may include Audit, Front Desk, Housekeeping, Maintenance and Sales. Functional departments within a typical full service hotel may also include Rooms, Food & Beverage, Human Resources, Marketing & Sales and Accounting. Larger hotels may have more complex organisational structures, including an Assistant General Manager and Resident Manager. These positions will report to the General Manager and can supervise the Housekeeping Manager, Front Office Manager, Telecommunication Manager, Engineer Manager, Security Manager, Human Resources Manager, Food & Beverage Manager, and Sales Manager. Modern hotel management is trending towards flatter structures reducing the need for many middle managers who used to perform the tasks of collaboration between departments/units and supervision of employees.

In the hotel environment, it is common that each department/unit has specific predefined responsibilities including the handling of any related customer complaint matters. It is assumed by management that the senior employees/supervisors/department head in each department is capable of handling customer complaints. It is an exception for a hotel to have a separate department/unit for complaint handling. It is more likely that the front desks or the telephone operators will receive the majority of enquiries and complaints. The trend towards a flatter organisational structure is likely to promote the need to provide greater support to individual employees about customer complaint management.

3.3. Hotel Operational Environment

3.3.1. Internal Environment

Both the organisational structure of individual hotel and the environment under which it is operating influence the way in which customer complaints are managed. This research has analysed the hotel operational environment both internally and externally. Internally, hotels are operating in an environment with:

i)   high employee turnover rate;

ii)   high causal and seasonal employment;

iii)   a high percentage of lower skilled workers;

iv)   a high dependency on information technology; and

v)   a low paid workforce.

High employee turnover rate

Traditionally, the hotel industry has a very high employee turnover rate (Jones & Newton 1997; King et al. 1998). The Australian Workplace Industrial Relations Survey in 1995 found that the accommodation, cafes and restaurants industry sector had the highest level of industry turnover of 35 per cent compared with an all industry average of 19 per cent (De Cieri & Kramar 2003). Deery (2002) has reported that hotel employee turnover varies from 20 per cent in CBD (Central Business District) hotels to over 300 per cent in remote resort hotels in Australia. As for many aspects of hotel management, the high employee turnover rate will affect a hotel's customer complaint management capacity since the key personnel leave the hotel if the hotel does not have a good knowledge management practice.

High casual and seasonal employment

Another important characteristic of the hotel industry is high casual and seasonal employment. Research (Gilder 2003; Keiser 1989) has shown that a high casual employment rate is one of the important employment characteristics of the hotel industry. The high casual and seasonal employment rate in hotels is largely driven by seasonal demand in the sector and being seen by managers as a strategy to overcome the volatile nature of the market. It is also a side effect of cost management.

Many hotels operate with only a minimal number of permanent employees. The Australian Bureau of Statistics (ABS 2004) has shown that 58.6 per cent of workers in the ABS industry classification 'accommodation, cafes, and restaurants' were employed as casuals. In Australia, it is not uncommon for casual workers to be employed on an ongoing basis. They often undertake core duties in hotels.

High percentage of lower skilled workers

Hotels generally employ a high percentage of lower skilled workers (Bounchen 2002). In Australia, according to the reports from government agencies (Victorian Department of Education 2000; Department of Small Business and Tourism 2002), the hospitality industry does not greatly value formal training acquired prior to employment. Employers are generally interested in obtaining staff who are willing to work the hours required.

Low paid workforce

The hotel industry provides relatively low wages and salary compared to other industries. According to Australia Bureau of Statistics (ABS 2005), in 2004 the average weekly income in Accommodation, Cafes and Restaurants had fallen to $459.90 per week. This was the second lowest paid industry just ahead of the Retail trade sector on $449.00 per week.

The results perhaps are contributed by the combined employment factors of low skilled and casual and seasonal workers. This low wage situation may hinder the ability of the industry to retain its workforce and provide quality services. This situation results in challenges for employee retention, not only for an individual hotel but also the industry as a whole.

High dependency on Information technology

The advancement of information technology has provided many opportunities to hotels. Various research (e.g., Peacock 1995; Schertler 1994) has indicated the dependency of hotels on the advancement of information technology. Schertler (1994) has argued that there are two factors other than size that affect the use of information technology in an accommodation establishment. They are:

a)   the type of clientele and

b)   the complexity of operations.

Hotels that target business travellers are likely to adopt new information technology because business travellers often value efficiency and speed of service. The complexity of hotel also impacts upon the application of information technology, since the

operation generates higher volumes of information to be processed, transferred and stored.

In many ways the advancement of information technology continues to enhance the way hotels operate such as:

i) modern reservations systems which allow not only travel agencies and other intermediaries to access the real time hotel reservation information but also allow customers to make bookings via the Internet;

ii) the use of more sophisticated property management and customer management systems which allow hotels to improve the level of service provided to guests; and

iii) the use of historical data about guests has been seen as one of the competitive advantages of hotels.

By using sophisticated data analysis techniques, hotels can provide direct marketing incentives to customer based past purchase behaviour.

3.3.2. External Environment

In addition to the internal operating environment attributes, this study also considers how external attributes might influence hotel customer complaint management. Externally the hotel industry is operating in an environment with:

i) shrinking customer loyalty and increasing customer sophistication;

ii) shrinking information asymmetry;

iii) increasing emphasis on specific marketing segments;

iv) changing customer preferences;

v) increasing globalisation and collaboration; and

vi)   consumer right movement.

Shrinking customer loyalty and increasing customer sophistication.

A recent trend is that customers often shop around for the best deal and are loyal only to hotels that give them a consistently superior deal (Reid and Bojanic 2001). At the same time customers are becoming more sophisticated, focusing more on value and less on quality or price. These trends have been confirmed by many interviews of practitioners and academics alike that call for the need to put an increased effort on hotels retaining customers.

Shrinking information asymmetry

The advance of information technology particularly the Internet technology shrinks information asymmetry (Laudon & Laudon 2004). Information asymmetry exists when one party in a transaction has more information that is important for the transaction than the other party.

Recently, potential hotel customers have access to a legion of Web sites providing competitive pricing information about hotels. The advance of the Internet technology has also increased the total amount and quality of information available to market participants such as travel agencies, other distribution channels, and consumers alike. Both the customer and merchants are benefiting not only from lower search costs but also from a new channel for communication.

The advancement of the internet technology has also created new form of customer complaint medium labelled as electronic complaints (refer to Mills & Law 2004; Tyrrell & Woods 2004) for more discussions on electronic complaints). In this form of complaint, dissatisfied customers often send out emails or post online messages to express their unhappiness. Such actions can be very damaging for the hotels involved.

Increasing emphasis on specific marketing segments

Recently, hotels have been focusing on targeting specific market segments. It appears that mass marketing has become passé in the hotel industry (Reid & Bojanic 2001, Reid & Bojanic 2006; Stutts & Wortman 2006). Hotel marketing is placing an increased emphasis on providing personal services to individual customers by utilising the past customer data received from various hotel information systems. This approach requires the management of customer complaints to support to maintain the customer base by meeting and exceeding customers' expectation.

Stauss and Seidel (2004) have argued that the transaction driven marketing is primarily focused on the acquisition of new customers, while the relationship-oriented marketing is built upon the knowledge that wining new customers is associated with extraordinarily high investments in a mature market. This applies to the hotel industry where minimal growth rates and the loss of customers weakens the firm itself whilst strengthening its competitors.

Changing customer preference

Customer preferences are not static. Research by Keiser (1989) has indicated that customers often change their preferences over a period of time. This creates challenges for hotel management. Unless they learn about and adapt to targeting their customers they will lose them. The ability to understand the trend of customer preferences is increasingly recognised as a competitive advantage for hotels. This has led the increased research output in the area of customer focused research in the last decade (e.g., Campbell 2003; Gibbert et al. 2003; Garcia_Murillo & Annabi 2002; Gibbert et al. 2002; Li & Calantone 1998; Rowley 2004). The knowledge of customers has been recognised as one of the important sources of the overall knowledge relevant to service quality and innovation.

Increasing collaboration

Increasing collaboration creates both opportunities and challenges for hotels. Within the industry, the collaboration between hotels, as a member of a hotel chain has promised cost reduction by recruiting customers for individual hotels. There is a challenge for hotel chains to provide consistent quality service crossing their entire individual hotels.

Industry wide, there is a trend to achieve cost savings by outsourcing some of the components of the hotel operation (Hayes & Ninemeier 2004; Stutts & Wortman 2006). It is not uncommon for a hotel to outsource its ancillary services such as laundry services to an outside service provider. The collaboration also appears in the form of distribution channels such as travel agencies, and global reservation systems.

Increasing globalisation

Regardless of size, globalisation affects the operational environment of hotel businesses. The globalisation processes have created a challenge for hotels to change in economic management and market strategy alike (Reid & Bojanic 2006; Stutts & Wortman 2006). There is evidence that the industry is moving in a direction towards hotel chains and groups getting bigger and more globalised. For example, the hotel group Accor has over 3,5000 hotels, 130,000 employees with brands like Formula One, Ibis, Novotel, and Sofitel (see Bounchen 2001). The potential need for consistency and efficiency support for the management of hotel customer complaints will be particularly important for chain hotels that value standardisation.

Consumer right movement

Consumer protection awareness developed significantly in an organised way in the early 1960s. According to Blackwell et al. (2006), the modern consumer rights movement can be tracked back to the consumer bill of rights enacted by the Kennedy administration in USA in 1960s:

a)   the right to safety, protection against products or services that are hazardous to health and life;

b)   the right to be informed and provided with facts necessary for an informed choice; protection against fraudulent, deceitful, or misleading claims;

c)   the right to choose- assured access to a variety of products and services at competitive prices;

d)   the right to be heard (redress)- assurance that consumer interests receive full and sympathetic consideration in the formulation and implementation of regulatory policy, and prompt and fair restitution;

e)   the right to enjoy a clean and healthful environment; and

f)   the right of the poor and other minorities to have their interests protected.

Consumer protection standards and regulations have been used to regulate complaint management in Australia and New Zealand. For example, the Australia Complaint Handling Standard AS4269, which was released in 1995, ISO10002 (earlier known as ISO 10018 developed by the International Organisation for Standards), Quality Management - Customer Satisfaction - Guidelines for Complaints Handling in Organisations, which was released in July 2004, and AS/NZS 3906:1994 Quality of Service-guide to customer expectations Standard Australia and New Zealand. As consumers' awareness of their rights increased so to did the importance of managing knowledge about complaints

Table 1 summarises the internal and external operational environment of hotels. Both of the internal and external environment factors have presented opportunities and challenges for the effective management of hotel customer complaints.

Hotel Operational Environment	
Internal	**External**
High employee turnover rate	Shrinking customer loyalty and increasing customer sophistication
High casual and seasonal employment	Shrinking information asymmetry
High percentage of lower skilled workers	Increasing emphasis on specific marketing segments
High dependency on Information technology	Changing customer preference
Low paid workforce	Increasing globalisation & collaboration
	Consumer right movement

Table 1: Hotel operational environment

3.4.Customer Complaints and Management

3.4.1. Service Failure and Customer Complaints

In the hotel industry, a service failure is considered to be a situation where a hotel organisation is unable to deliver the promised quality of services to meet the customer's expectation. Hoffman and Bateson (2001) have argued that service failures are inevitable breakdowns in delivering hotel service because of the intensive involvement

of human elements in service delivery. Jones and Newton (1997) have argued that the service performance gap can be further drilled down to the considerations of:

a)   the differences between the management perceptions of customers expectations and the actual customers' expectations;

b)   the service specifications;

c)   management perceptions of customers' expectations; and

d)   the service specifications and services actually performed.

In practice, an incidence of service failure reveals a service performance gap that is a mismatch between a customer's expectations and the actual service received. It is one of the primary sources for customer complaints. Gronroos (1995) explains that a service failure breaches the central promise concept of a prospective relationship.

Service failures can take various forms from being something as serious as restaurant food poisoning or an injury to a guest, to something as minor as a short delay in service. From a customer's perspective, a service failure can be any situation where something has not met expectations, irrespective of who takes responsibility for the problem. It can vary across dimensions of time, severity and frequency (Palmer et al. 2000).

Research has argued that a customers' perceptions of a service failure is relevant to the criticality (Matilla 1999; Webster & Sundaram 1998) and severity (Kelley et al. 1993; Smith et al. 1999) of the failure. It depends upon how critical the delivery of the service is to the customer and the perceived consequence of the service failure. Maxham and Netemyer (2002) have argued that the greater the number of severe failures the more the organisation may be required to provide greater offers of compensation in order to regain customer satisfaction.

Reid and Bojanic (2001) have argued that most customers complain in an attempt to reverse an undesirable state. Other more complicated reasons for complaints are to release pressure, to regain some form of control over a situation, or to obtain the sympathy of others. Whatever the reason, the resulting outcome is that customers are not completely satisfied with the service the customer has received, and it is in the hotel's best interest to know when this situation occurs.

Service recovery is not only involved with fixing problems. McDougall and Levesque (1999) have argued that service recovery involves fixing problems, but also claim that an effective service recovery program should not only fix the problem but also include processes that help customers feel comfortable with the solution. There is no simple formula for service recovery, largely due to the unique nature of many failures in service encounters.

Complaint management, an effective tool for service recovery, is more than just handling customer complaints. As Gilly (1991) has argued, complaint handling rectifies the situation directly with the customer, whereas complaint managing improves policies or the way the organisation performs business, so that future customer care is improved. Stauss and Seidel (2004) have proposed that complaint management encompasses the planning, execution, and controlling of all the measures taken by a firm in connection with the complaints it receives. They state that the global aims of complaint management lie in increasing the profitability and competitiveness of the firm by restoring customer satisfaction, minimising the negative effects of customer dissatisfaction on the firm, and using the indications of operational weaknesses and of market opportunities that are contained in complaints.

Customer complaints provide important sources for organisational innovation and quality improvement. Research by VonHippel (1977) has found that most product innovations come not from within the company that produces the product, but from end users of the product. Many hotels use professional marketing people to conduct surveys to find what their customers want. Complaints, on the other hand, tells that what aspect of the service that could not meet customers satisfaction. Harrari (1999) has argued that customer complaints are a valuable source of information for companies to improve their services or products. Complaints reveal the weak points of the products and services of the company.

Customer complaints are often the results of a service failure. A customer complaint is essentially a statement made by a dissatisfied customer about his or her unmet expectations. The definition of complaint varies from business to business, but usually is defined as the gap between a customer's expectation and the quality of the products and services delivered by the business. The Australian Standards in Complaints Handling AS 4269-1995 defines a complaint as any expression of dissatisfaction with a product or service offered or provided. Responsive managing of complaints not only facilitates effective resolution of consumer problems but also provides opportunities to improve long term relationships with customers (Estelami 2000; Estelami 2004; Mitchell 1993). As such, complaint management is an effective means to reduce customer dissatisfaction.

Why is complaint management so important to an organisation? Various research (Babich 1992; Fornell & Wernerfelt 1987; Harrison-Walker 2001; LeBoeuf 1990; Tyrrell & Woods 2004) has suggested that retaining existing customers is less

expensive than attracting new ones. This is simply because it is more cost effective to maintain existing customers than to invest extra marketing budgets to find new ones. Desatnick (1988) has revealed that it costs five times as much to attract a new customer as it does to retain a current customer. Other research (LeBoeuf 1990) has shown that it costs six times more to attract new customers than it does to keep old ones and customer loyalty is worth 10 times the price of a single purchase. Similarly, Babich (1992) has reported that it is five times more costly to recruit a new customer than it is to keep the existing one and further elaborated that dissatisfied customers tell eight to twenty people about their experiences, whereas satisfied customers tell only three to five people about their treatment. Fornell and Wernerfelt (1987) have argued that the pay-off gained from retaining a dissatisfied customer is many times greater than the cost of remedying the complaint. For those reasons aforementioned, customer complaint management has been valued by business as an effective mechanism for customer retention.

3.4.2. Relationship Focused Management

Drucker (1973) has argued that the purpose of business is to create and then retain satisfied customers. Various research (e.g., Nightingale 1985; Parasuraman & Grewal 2000) has argued that building customer satisfaction and creating long-term loyalty are two of the major business tasks facing service providers. The trend in service related marketing is continually turning away from the traditional perspective of conventional transaction driven marketing with placing the emphasis on the customer relationship.

Relationship focused marketing is marketing based on an interaction within networks of relationships (Gummesson 2002). It is perceived as a strategy to develop a

competitive advantage (Day 2000). For those reasons, Stauss and Seidel (2004) have argued that what is important is not simply to win the customers over in the pre purchase phase, but rather to accompany them through all the purchase and use phases and to bind them for as long as possible by offering solutions to problems that are tuned to their various needs.

Transactional and relational exchanges derived from relationship marketing theory are explained by Dwyer et al. (1987). They maintain that transactional exchange involves short-term events, narrow content and limited relational elements, whereas relational exchange represents extended duration, personal satisfaction, and involves social exchange. From a management point of view, the satisfaction of customer expectations should be the focus of all the activities of an organisation (Denham 1998). The customer relationship management approach is a tool, mechanism and process for supporting the relationship between customers and service providers.

Day (2000) has argued that customer relationship management involves attracting, developing and maintaining successful long-term relationships with the firm's customers. Fundamentally, customer relationship management is concerned with attracting and keeping profitable customers and repelling and eliminating non-profitable customers. The key components of customer relationship management are to

a)   maximise customer satisfaction and minimise customer dissatisfaction;

b)   increase customer loyalty;

c)   increase product and service quality and

d)   resolve customer complaints.

The customer relationship management approach promotes building quality relationships with customers to generate long-term profit. Customer relationship management systems involve the values and strategies of relationship marketing, with a particular emphasis on turning customer relationships-turned into practical applications (Gummesson 2002). These systems attempt to develop a coherent, integrated view of all the relationships that a firm maintains with its customers.

Research (Piccoli et al. 2003; Rose & Sugumaran 2003) has stressed the importance of managing customer knowledge as a necessary aspect of customer relationship management systems implementation. Barnes (2003) has argued that customer relationship management is more than a IT driven program to optimise customer contact. The aim of a customer relationship management program is to establish a trust between the organisation and its customers that lead to loyal behaviour and to a commitment in the sense of an inner bond.

Recent research distinguishes three types of customer relationship management systems (e.g., Adebanjo 2003; Xu et al. 2003)

    a)   operational;

    b)   analytical; and

    c)   collaborative customer relationship management systems.

An operational customer relational management system focuses on the functions in the customer servicing points by collecting customer data to support about customer contacts. An analytical customer relational management system emphasises turning customer data into customer information in order to support the management decision-making process. A collaborative customer relationship management system includes

tools for building online communities, developing business-to-business customer exchanges and personalising services.

The performance of the customer relation management systems is predominately influenced by the underlying supply with knowledge about products, markets, and customers (Garcia_Murillo & Annabi 2002). The customer relationship management process has been characterised by Eppler et al (1999) as knowledge intensity and process complexity. The former indicates that customer relationship management process requires knowledge from heterogeneous sources and the latter shows that customer relationship management process mainly involves complex structures. These characteristics imply the importance of a high degree of knowledge in the design and execution of customer relationship management processes.

Zablah et al. (2004) have argued that majority of customer relationship management failures are a result of a lack of understanding about the true nature and required antecedents for a successful customer relationship management systems implementation. The quality of customer complaint management is strongly linked to the effectiveness of customer relationship management. Various research (Bitner et al. 1990; Smith et al. 1999; Sparks 2003) has indicated that the dynamics of the customer and service provider relationships deserves further investigation.

In the domain of hotel customer complaint management, dissatisfied customers, the hotel employees, the suppliers of the hotels and the hotel that receives the customer complaints are the primary stakeholders and problem holders. According to Freeman (1984) a stakeholder in an organisation is any group or individual who can affect or is affected by the achievement of the organisation's objective. The term stakeholder

should be contrasted to the terms stockholders and shareholders. In the domain of knowledge-enabled hotel customer complaint management, a stakeholder can be any group of individuals who can be affected by the management of the hotel customer complaint management knowledge.

Stakeholders can be distinguished as primary and secondary stakeholder. According to Clarkson (1995, p106-7), a primary stakeholder is *'one without whose continuing participation the corporation cannot survive as a going concern'*. A secondary stakeholder is *'those who influence or affect, or are influenced or affected by, the corporation, but they are not in transactions with the corporation and are not essential for its survival'*. Secondary stakeholder groups are not essential for the corporations' survival. They can, however, cause significant damage and may be opposed to the programs and policies that the corporation has adopted in order to fulfil its responsibilities or to satisfy the expectations and needs of, its primary stakeholder groups. The effective management of hotel customer complaints benefits not only the hotel that receives the customer complaints, but also customers whom make the complaints. This research is focused on the identification and application of the primary stakeholder's knowledge in the domain of hotel customer complaint management.

3.5. Service Management Approaches

In practice, production-line approach and employee empowerment approach are two traditional management approaches being used in both manufacturing and service industries. The former values the standardisation and efficiency, the latter stresses interpersonal skills of employees in a service encounter.

3.5.1. Production-Line Approach

The concept of a production line approach to service management was advocated by Lewitt (1972). It is based on the premise that costs can be reduced and consistency maintained by specifying procedures to be adopted by employees. The main components of the product-line approach were similar to those found in manufacturing. In the latter, the quality of products is achieved through enforcing standardisation. Bowen and Youngdahl (1998) have indicated that industrialisation relies on technology to increase production volume while reducing the likelihood of error. The production-line approach implies that customer service in itself is primitive.

In order to achieve efficiency, the production-line approach promotes the creation of new tools, processes and organisational models. Palmer et al (2000) have indicated that the result of industrialisation has changed many employees' roles in service industries: deskilling them and reducing their scope for discretion. They have argued the term *McDonaldlisation* in service industry has become synonymous in many peoples' minds with a scripted servility, which is devoid of flexibility and feeling. It focuses more on the product and internal process, rather than the needs of the customer.

The production-line approach promotes standardisation and task specialisations, training and supervision. It fails to address the essential component of change (Bowen & Youngdahl 1998). In searching for sources of competitive advantage, Leshley (1999) has argued that the ability to quickly adapt to change is important, because the demand and supply of service has increased in both size and variability.

The subsequent *lean* product-line approach involves an adoption of several important humanistic components, such as increased employee discretion and a focus on customer preferences. In addition to recognise the importance of the human element, the *lean* production-line approach promotes the application of information technology for assisting service personnel (Schlesinger & Heskett 1991). As such, information technology has had a great impact on a hotel's operating procedure.

3.5.2. Employee Empowerment Approach

The notion of employee empowerment describes a situation where employees are given the authority to act with a certain degree of latitude in the service process. Empowerment is essentially about supporting and expecting that employees will use their initiative to put the interests of their organisation above all else. The increased degree of control in relation to the execution of the relevant tasks enhances the accountability for the individual performance (Lashley 1999). Kendall (2003) has argued that when empowerment is properly implemented, it provides frontline employees with the information and authority needed in order to solve problems.

Empowerment may be seen as the opposite extreme on a continuum from industrialised command and control management. It has been argued by research (e.g., Palmer et al 2000) that excessive discretion may result in a company incurring higher costs than necessary and may detract from the consistency of a brand image. In order to minimise the issue of excessive discretion, latitude or discretion should be limited to relevant tasks or areas of expertise (Bowen & Youngdahl 1998). In handling operational issues it is also important to have employee training, an appropriate rewards system and providing tools in place to assist employees (Mckenna & Mckenna 1997).

Nevertheless, Lashley (1999) has indicated that the success of the empowerment is dependent on the operating industry, the management style applied and the experience being empowered.

Knowledge drawn from studies of consumer complaint behaviour suggests that employee empowerment in handling complaints, enhances the customer satisfaction level. Denham (1998) has argued that employee training and employee empowerment are important components in the effective handling of complaints. However, it is difficult to delineate a successful service encounter, due to the fact that a customer's expectations of a service and its quality vary considerably amongst individuals.

A study by Lashley (1999) has shown that there is a correlation between empowerment and improved service quality. Palmer (2000) has found that customers are more likely satisfied when the service recovery is initiated and completed by a line-level employee rather than when a manager becomes involved. Jones and Newton (1997) has argued that in order to maintain the customer care standards it is necessary to delegate the authority to care for the customers to all members of the staff. In spite of the difficulty in clearly defining a successful service encounter, it could be said that empowerment needs to involve not only employees but also the support of management to improve service quality.

3.6. Chapter Summary and Conclusions

The domain of hotel customer complaint management research is a multidisciplinary field of study. It is related to a wide range of academic disciplines: management and marketing and their sub disciplines such as service management and hospitality

management; consumer study, and information technology and relationship management. The current literature on knowledge management theory and practice is still minimal.

Many of the lessons learned and best practices in the domain of hotel customer complaint management have been a valuable source of evidence in the support of the formulation of the hotel customer complaint management concept (refer to chapter 5 for details) and the knowledge-enabled hotel customer complaint management model (refer to chapter 6 for details).

Although the trend of hotel operational in the hotel industry is moving to a more flat structure, the management structure is still reflecting the past practice that employees are typically being classified into functional areas and the quality of services is attained through job specified training. A full serviced hotel is typically separated into functional areas such as Housekeeping, Food & Beverage, Human Resources, Marketing & Sales, maintenance, and Accounting. The organisational structure combined with the operating environment of hotels promotes the need for systematic knowledge management in the domain of customer complaint management. The internal environment of hotel includes i) high employee turnover rate; ii) high causal and seasonal employment; iii) high percentage of lower skilled workers; iv) high dependency on information technology; and v) low paid workforce. The external operational environment includes i) shrinking customer loyalty and increasing customer sophistication; ii) shrinking information asymmetry; iii) increasing emphasis on specific marketing segments; iv) changing customer preferences; v) increasing globalisation and collaboration; and vi) consumer right movement.

Customer complaint management has been argued by various authors as one of the effective service recovery mechanisms to support customer retention and quality improvement of service delivery for hotels. The dominant service management approaches in the hotel industry are production-line approach vs employee empowerment approach. The dissatisfied customers, the hotel employees, the suppliers, and the hotel receive the complaints are the primary problem holders in the domain of hotel customer complaint management. This research proposes a knowledge-enabled approach to support the management of hotel customer complaints (refer to chapter 6 for more discussion on the knowledge-enabled approach).

The next chapter discusses the selection and adoption of a specific methodology including techniques for the conduct of this research.

CHAPTER 4: RESEARCH METHODOLOGY

4.1.Introduction

The previous two chapters reviewed the theoretical background behind this study. This chapter presents the research methodology employed in the design, conduct, and analysis of the study. The chapter begins with an examination of the influence of the pragmatic choices of philosophical assumptions in terms of the adoption of research methods. It then moves to specific aspects of the research design including the data collection, analysis, and modelling.

This study has adopted an interpretative - qualitative approach. A set of qualitative data analysis methods has been employed to support the formulation of the hotel customer complaint management concept and the knowledge-enabled hotel customer complaint management model. Object-oriented theory has been adopted to represent the concept and the model (refer to chapter 5 and 6).

4.2.Philosophical Assumptions

A research philosophy contains underlying assumptions that a researcher makes about the world being modelled. Understanding the relevant philosophical assumptions is essential for developing a research design. Different views lead to varying conception, as the philosophical beliefs provide guidelines and principles in relation to how a research is conducted. In this study, the methodology takes into account of the

ontological and epistemological assumptions that provide the underlying foundations upon which the theory and methods are built.

4.2.1. The Epistemological Perspective

Epistemology is concerned with what constitutes acceptable knowledge within a particular field of study. It defines the grounds of knowledge (Klein & Hirschheim 1987). Epistemology relates to the way in which the world may be legitimately investigated and what may be considered as acceptable knowledge and progress. It is concerned with the sources of knowledge, the structure of knowledge and the limits of what can be known.

Different epistemological assumptions often promote researchers to adopt a particular approach for an inquiry regarding what should be known. Two of the extreme positions of the epistemological perspective are positivism and interpretivism (see Kuhn 1970). Positivism implies the existence of causal relationships that can be investigated scientifically, whereas interpretivism implies that there is no single provable truth through such investigations. Positivism is premised on prior fixed relationships within a phenomenon. These are typically investigated with structured phenomena and theories are tested in order to increase the predictive understanding of a phenomenon (Orlikowski & Baroudi 1991). According to Kuhn (1970), the positivist paradigm involves a set of interrelated assumptions about the social world that provide a philosophical and conceptual framework for a systematic study of that world. Positivism combines deductive logic with precise empirical observations in order to discover and confirm a set of probabilistic causal laws that can be used to predict general patterns of activity (Neuman 2003; 2006). It assumes an objective world and

often searches for facts conceived in terms of specified correlations and associations among variables.

Post positivism is a recent evolution of positivism. Consistent with positivism, post positivism assumes an objective world existence but it also considers that the world cannot be readily apprehended and that variable relations or facts are only probabilistic rather than deterministic. Miles and Huberman (1993) have indicated that the recent focus of post positivism has been on qualitative methods, modelled on the basis of positivistic methods and experimental designs.

Interpretivism rejects the objective nature of positivism and adopts a nondeterministic perspective to understand the various phenomena within a cultural context (Orlikowski & Baroudi 1991). The phenomenon of interest is examined in its natural setting and from the perspective of the participants. According to the interpretivist, researchers do not impose a prior understanding of the situation, but interpret a given phenomenon in a context. With the objective of undersdanding social phenomena, the interpretivist research tradition focuses on the evolution of rich, complex descriptions of specific cases (Walsham 1995). Neuman (2003) has stated that interpretative research involves a systematic analysis of socially meaningful action through direct detailed observations of people in natural settings. It does this to arrive at an understanding and interpretation of how people create and maintain their social worlds.

4.2.2. The Ontological Perspective

Ontology refers to a systematic explanation of being (Corcho et al. 2003). In knowledge engineering and conceptual modelling, an ontology defines the basic terms

and relations comprising the vocabulary of a topic area and the rules for combining terms and relations to define extensions to the vocabulary (Neches et al. 1991). It is concerned with the essence of things and the nature of the world. The two extremes of the ontological perspective are realism and nominalism (Klein & Hirschheim 1987). Realism postulates that the universe comprises objectively given immutable objects and structures. These exist independently as empirical entities separate form the observer's appreciation. Nominalism suggests that reality is not an immutable given, but is socially constructed. It is the product of the man mind.

The ontological approach of this thesis is described as an essentially modernist or late modernist perspective. It borrows from post-modern thought regarding values and standards (Giddens 1984; Neuman 2006). The existing approaches to conceptualising reality with regard to philosophical assumptions concern the paradigmatic dimension of objectivism versus subjectivism.

Within the objectivist domain, the Universe of Discourse (UoD) is comprised of immutable objects and structures that exist as empirical entities. In principle, a model of the UoD exists independently of the observers' appreciation of it. A model is true if it accurately depicts the underlying reality of the UoD. In contrast, subjectivist conceptual modelling holds that the UoD is a subjective mental construct. A model can best reflect those conventions or perceptions that are subject to negotiated change. Important mechanisms by which subjective experiences take on an objective quality in the minds of individuals are the rules surrounding institutions, tradition as transmitted through artefacts and the changing use of language and sedimentation (Berger & Luckmann 1967). In this context, sedimentation refers to the ordering of experiences transmitted subconsciously by virtue of growing up in one segment of society as

opposed to another or in different societies altogether. According to this view, a model is correct if it is consistent with the perception of the UoD as constructed by institutional programming, sedimentation and tradition. The objectivist view holds that language depicts reality neutrally, regardless of culture and individual perceptions.

The approach taken in this study is subjectivist, working from the assumption that reality is personally interpreted and socially constructed. The interviews with hotel employees and academics in hospitality management are the principal means for gathering empirical evidence within the wider context of hotel customer complaint management. This is done with a view to studying the nature of customer complaint management knowledge and its applications. The approach is subjectivist, working from the assumption that reality is personally interpreted and socially constructed (see Berger & Luckmann 1967; Denzin & Lincoln 2003; Miles & Huberman 1993; Neuman 2003; Patton 1990) and that an interpretivist/constructivist framework allows the research participants to exert a considerable influence on the important questions and findings. This belief in reality led to the selection of research methods compatible with socially constructed forms of gathering empirical evidence, particularly the use of interviews to gather the perceptions and meanings of the persons involved in the research phenomenon under investigation.

The ontological question about what is being modelled points to the fundamental assumptions of conceptual modelling approaches. This involves the nature of the UoD, and the domain application. The ontology of conceptual modelling involves various terms including entities, objects, relationships, facts and speech acts. The ontology of conceptual modelling makes some fundamental assumptions about the nature of an application domain. These include whether there is a single or multiple user system or

indeed no system at all; whether the primary constituents of each user system are operations, roles, decisions, social action or speech acts. Similarly, as Klein and Hirshheim (1987) have argued, different views and interpretations for a problem domain are potentially legitimate. The way to progress is not to try and discover the one correct view, but to accept the differences and seek to gain insight by a deep understanding of such complexity.

The interpretative epistemological foundations underlying the conduct of this thesis assume that the knowledge of reality is always filtered and interpreted through personal context, personality, insight and history. It also assumes that the knowledge gained and individual interpretations of that knowledge are strongly influenced through social constructions. However, as well as perceiving knowledge to be interpretively understood and mediated by social construction, this research investigates the pragmatic application of knowledge management in the domain of hotel customer complaint management and is grounded within a context of pragmatism. The assumptions underpinning the thesis are that the social and business worlds under examination are interpreted and expressed by the participants through socially constructed understandings filtered through personal perceptions. From these epistemological foundations, an interpretative methodology using interview method has been selected as the most appropriate means of conducting the research.

4.3. Research Approaches

Research is a purposeful action. All academic disciplines involve implicit assumptions about what research methodology is appropriate (see Healey & Rawlinson 1994; Jankowicz 2005; Mills 1940; Myers 1997; Robson 2002; Saunders et al. 2007; Sykes

1991). In this context, methodology refers to the way in which mans approach problems and seek answers (Taylor and Bogdan 1984). This research is not an exception.

Choosing an appropriate methodology is important to better design the research process, conduct the research, and to validate the research outcomes. In the following sections, the merits of different research approaches and practical methods are discussed in order to support the researcher's use of a set of appropriate methods for the conducting of the study.

4.3.1. Deduction vs Induction

The deductive and inductive approaches have been predominant in recent research (see Collis & Hussey 2003; Easterby-Smith et al. 2002; Gill & Johnson 2002; Robson 2002; Neuman 2006; Saunders et al. 2007). In the former approach, the literature is often used to identify theories and data is used to test those theories. It focuses on the relationships between variables. Researchers often use highly structured quantitative method to measure such variables. The latter approach explores data and develops theories from this data. In this approach researchers are more likely to work with qualitative data and use a variety of methods to establish different views of a particular phenomenon in order to increase the theoretical understanding on the phenomenon.

Both the deductive and the inductive approaches can be used to conduct research. The deductive approach uses existing theory to identify the various theories and ideas that will be tested using data. It aims to explain causal relationships between variables. Researchers use highly structured methods to quantify the concepts identified in the

literature (see Gill & Johnson 2002; Robson 2002; Saunders et al. 2007). As Collis and Hussey (2003) have explained deductive research involves the development of a theory that is then subjected to rigorous testing. It constitutes the dominant research approach in the natural sciences, where laws provide a basis for explanation, permit phenomena to be anticipated, predict their occurrence and therefore permit their control.

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The inductive approach involves the exploration of data and the development of theories. The researcher relates these to the literature. The inductive approach often involves the use of a small sample. Using the deductive approach a large amount of data is generally appropriate. A distinctive aspect of the inductive approach is that the theory should follow data rather than vice versa as occurs using the deductive research approach (see Neuman 2006; Saunders et al. 2007). Easterby-Smith et al (2002) have stated that with this tradition, researchers are more likely to work with qualitative data, to use a variety of methods to collect this data, and to establish different views of the relevant phenomena.

Neuman (2003) has stated that research is a three-stage process: theory building, theory testing and theory refinement. Theory building involves exploring concepts and phenomena and leads to the formulation of research questions. Theory testing addresses clearly formulated research questions and theory refinement builds on the results of the previous phases to refine and improve the adequacy of the theories as originally set out.

Research projects generally have an explicit purpose. As suggested by Yin (1994), research may be classified into three categories, namely exploratory, descriptive and explanatory. Exploratory research is aimed at formulating precise questions that will be answered by future research. Descriptive research attempts to analyse and describe the

specific details of a situation, organisational setting or practice. It aims to take a well-defined subject and provide an accurately description of its structure and function. Explanatory research attempts to answer the question of why things happen. Research with this objective usually employs methods that allow for a high level of control such as experimentation.

According to Yin (1994) exploratory research addresses "how" and "what" type of questions and is used in the theory building stage of research; while "how many", "who", "where" are the typical questions for descriptive research, which is also appropriate to the theory building stage. It can be used to test theory about the structure of a situation, and to disprove hypotheses. Explanatory research generally deals with "why" type of questions. Explanatory research is useful for theory testing or theory refinement.

4.3.2. The Practical Approach of the Research

Quantitative and qualitative methods are two different approaches for the conduct of research. Neuman (2006) has stated that quantitative research concerns issues of design, measurement, and sampling because their deductive approach emphasises detailed planning prior to data collection and analysis. This includes experiments, surveys, content analysis and analysing existing statistics.

Qualitative research, on the other hand, emphasises the issues of richness, texture and feeling of raw data. The inductive approach emphasises developing insights and generalisations from the data collected. According to Creswell (1994) and Creswell (2003), qualitative research is exploratory and useful when a domain is not well

understood. The quantitative approach emphasises the measurement and analysis of causal relationships between variables (Denzin & Lincoln 2003). Although there are specific research methods for a particular problem, Guba and Lincoln (1994) assert that both qualitative and quantitative methods may be appropriately used with any research approach.

This study adopts the position that qualitative research methods are suitable and valid research methods for knowledge modelling and in particular for an application to hotel customer complaint management. Recent studies (see Chung & Hoffman 1998; Harrison-Walker 200; Manickas & Shea 1997; Walker 2001) have indicated that many previous service management studies have utilised qualitative methods to gain insights into critical incidents involving service mishaps. Robson (2002) has argued that qualitative research is a systematic and empirical strategy for answering questions about people in a bounded social context. Researchers (e.g., Golden-Biddle & Locke 1997; and Hobson 2003) have argued that there is a need for more exploratory and qualitative research.

This study focuses upon the theory-building phase. It is an exploratory study, since it is primarily concerned with asking "how" (e.g., how to support the management of hotel customer complaints) and "what" (e.g., what constitute the domain knowledge). These types of questions are typical of exploratory research. According to Zikmund (2003), exploratory research is typically conducted in areas where few or no previous studies have been undertaken. The knowledge management approach to the domain of hotel customer complaint management is a very contemporary issue and has been the subject of little previous examination. The lack of theoretical understanding and empirical

results in the domain of knowledge management models for the management of hotel customer complaints suggests that an exploratory and qualitative approach is valid.

This research wishes to develop concepts, to gain insights, and to understand the data gathered in the domain of knowledge management in customer complaint management in hotels, rather than collecting data to assess an existing knowledge management model or theory in the domain. Taking account of each of these matters such as the nature and stage of the research, and philosophical assumptions, an interpretative-qualitative approach was considered the most suitable approach.

4.4. Research Design

In the following subsections the researcher explains how the study was carried out, including: the purpose, objectives, and questions of the research (in section 4.4.1); the data collection options (in section 4.4.2); the primary data collection method (in section 4.4.3); and the secondary data collection method (in section 4.4.4).

4.4.1. The Purpose, Objectives, and Questions of the Research

The purpose of this study is to develop a better understanding on how hotel customer complaint management knowledge and its applications can lead to the advancement of pragmatic support in the management of hotel customer complaints.

Research into the management of hotel customer complaint knowledge concerns multiple disciplines including hotel management, knowledge management, information

systems, and dispute resolution and problem solving. This research addresses the fundamental question on how hotel customer complaint management knowledge can be used to support the management of customer complaints.

In knowledge management literature, it is suggested that effective management of organisational knowledge can contribute to the attainment of sustainable competitive advantage for organisations that systematically manage organisational knowledge. However, there is little known about the applications of knowledge management in hotels, particularly in the context of customer complaint management. Thus, the first objective of the study is to identify the key knowledge attributes, objects and relationships that are pertinent to the application of a knowledge-oriented approach in hotel customer complaint management.

The second objective is to suggest a practical application of hotel customer complaint management knowledge to support a knowledge-enabled approach in hotel customer complaint management. The central idea of a knowledge-oriented approach in supporting hotel customer complaints is that the knowledge (i.e., the hotel customer complaint management knowledge) has been seen as not only relating to the strategic dimension of knowledge management, but also the artefacts (e.g., customer complaint handling policies, procedures and systems) of the hotel customer complaint management in which the knowledge can be applied directly to support the management of customer complaints by hotels. These key knowledge objects and relationships were identified through interviews with domain experts in the area of hotel customer complaint management. This knowledge was informed by the relevant literature.

4.4.2. Data Collection Options

Having chosen to use a qualitative research approach, several primary data collection processes were considered. Four methods of qualitative research have been identified (Marshall & Rossman 1995; Yin 1994) including participant observation, direct/non-participant observation, document analysis and interviews. Each of these is examined against the fundamental objective of answering the research questions.

Participant observation within a situation is a longitudinal approach requiring extensive observation time. The aim is to provide the means of obtaining a detailed understanding of the values, motives and practices over time of those being observed (Hussey & Hussey 1997). This method is not appropriate as the primary data collection method in this study, because observations would not necessarily yield the rich data that the study seeks to make explicit. Further, the hotels contacted in this research saw the areas of privacy and commercial sensitivity as paramount for their business as well as for their customers. Furthermore, the process of customer complaint management in hotels involves customers and employees in various operational departments, often related to external entities. Thus the task of using the participant observation method would not be manageable within a limited time frame and resources. In these circumstances, the researcher does not use observations as the primary data collection method.

The direct or non-participant observation of an organisation is inefficient and can potentially confuse the purpose of the study. It involves observing and recording what people do in terms of activities of behaviour, without the direct participation of the researcher (Hussey & Hussey 1997). The aim of this study is not to gather an outsiders'

view on the process of hotel customer complaint management. Rather, the research is aimed to construct a domain experts' view on how the customer complaint management knowledge exists in employees, hotels and how the knowledge can be applied to support a better management of hotel customer complaints. Therefore, this method of data collection was not chosen as the primary data collection method.

Document analysis and review can be used to support the model of hotel organisations. However, it did not seem that the document analysis and review methods was be able to represent the richness needed to create a real description of the issues and practices in the domain of hotel customer complaint management. Because the ad-hoc approach in complaint management was prevalent in hotels and the knowledge management concept was not properly understood. Furthermore, hotels were not wiling to release such documents related to the management of customer complaints because data involving their customer are the subject of the privacy and confidentiality concerns. Thus, the analysis of documentation as the primary data collection method is unlikely suitable to answer the research questions.

Interviews are frequently used for the collection of qualitative data. An interview is a purposeful discussion between two or more people (Kahn & Cannell 1957) and a "favoured digging tool" for meaning (Benny & Hughes 1970). An interview can be:

a)   structured;

b)   semi-structured; or

c)   unstructured or in-depth.

Saunders et al. (2007) have argued that interview is one of the principal ways of conducting exploratory research. This research has used interviews as the primary data

collection method. For further detailed explanations on the choice over the semi-structured interview method, refer to sub section 4.5.2 in this chapter.

4.4.3. Primary Data Collection Method

The primary data collection was undertaken through face to face interviews with forty-seven domain experts in customer complaint management. They were drawn from the hotel industry and hospitality management academics.

Yin (2003) has suggested that through an interview, a researcher can best access the interpretations that participants have regarding the actions and events that have or are taking place. Fink (2005) has observed that in most knowledge management projects, the interview method is chosen in order to gain information about the intangible assets of knowledge workers. Various research (see Easterby-Smith et al. 2002; Healey 1991; Jankowicz 2005; Saunders et al. 2007) has supported the argument that an interview is the most appropriate method for obtaining data in the following circumstances:

a)   where there are a large number of questions to be answered;

b)   where the questions are either complex or open-ended; and

c)   where the order and logic of questioning may need to be varied.

Interview questions may be standardised or non-standardised (see Berg 2007; Healey 1991; King 2004). The former is often based on a predetermined and standardised or identical set of questions; the latter is used in qualitative research (e.g., semi-structured and in-depth interview).

From the perspective of interviewer involvement, interviews may be either

a)   respondent interviews - where the interviewer directs the interview
       and the interviewee responds to the questions of the research; or

b)   informant interviews - the interviewee is given the opportunity to talk
       freely about events, behaviour and beliefs in relation to the topic area
       (see Easterby-Smith et al. 2002; Robson 2002).

Taylor and Bogdan (1984) have argued that semi-structured and in-depth interviews are best suited to situations where:

a)   the research interests are relatively clear and well-defined;

b)   settings or people are not otherwise accessible; and

c)   the researcher has time constraints.

4.4.4. Secondary Data Collection Method

Interviews were expected to produce the richest and most practical information in this study whilst secondary sources supplemented the primary data set. Secondary data collection was achieved through the conduct of a critical literature review. The purpose of the literature review was to build a theoretical foundation for the research and inform data collection and analysis.

The secondary data collection was based on a critical literature review. The review explored the disciplines of customer complaint management, dispute resolution and problem solving, knowledge management, and information systems and modelling as well as hotel management. An iterative and incremental approach has been adopted to review the literature. The supporting literature was drawn from three major sources:

i)   academic journals;

ii)   books and book chapters; and

iii)   conference proceedings.

4.5. Empirical Data Collection

Prior to conducting interviews as the primary data collection method this study selected interviewees (refer to section 4.5.1), designed interview questions (refer to section 4.5.2), and considered several effective ways to carry out the interviews (refer to 4.5.3).

4.5.1.   The Selection of Interviewees

Knowledge in hotel customer complaint management is diverse and complex. In order to understand the nature of these complex experiences, rich sources of data are required from the interviewees involved in the domain. Rich data in this context refers to data filled with words that reveal the respondents' perspectives, and examples that communicate their personal interests and attention to subjects (Bogdan & Biklen 1998). Consequently, to achieve the objectives of the research, data was collected from hotel industry practitioners and from hospitality management academics. A total of 47 interviews were conducted.

4.5.2.   The Questions asked at the Interviews

The nature of a research determines the degree of structure of the instrumentation (Miles & Huberman 1993). This study requires cross-respondent comparison, in which some standardisation was needed in order to form a basis for comparison. However,

findings from preliminary less structured interviews can help refine the modus operandi for later interviews, especially as the key factors and issues become clearer.

This study focuses on the need for rich contextual information emerging from the data. Hence, a loose structure was chosen initially to allow developing concepts to be grounded in the data, and to provide thorough contextual descriptions. This approach put the initial emphasis on construct validity (Miles & Huberman 1993). As the interviews progressed and the key concepts became clearer, the interview method was refined slightly, in order to provide more structure. Thus, the emphasis gradually changed to a more confirmatory approach, with the need to ensure that responses from interviewees could be compared.

The research uses loosely defined semi-structured interview questions. According to Saunders et al (2007), semi-structured interviews support an interpretive approach to a problem situation. This may enhance the level of understanding of the meanings that the respondents ascribe to various phenomena. The semi-structured approach provides the researcher with an improved means of obtaining the relevant information from the interviewees. According to Skyes (1991), a qualitative approach provides flexible and responsive interactions between interviewer and respondents. As a consequence meanings can be probed, topics can be covered from a variety of angles and questions made clear to respondents. The use of semi-structured interview questions allowed the interviewer to explore the research questions in depth, as various circumstances arise. It allows for the possibility of modifying the order of questions depending on the flow of the conversation.

The semi-structured design also allows the researcher to omit certain questions in particular interviews. The interviews have been classified into two categories: according to the purpose of the interview. Category one focused on a systematic discussion with the domain experts. Category two focused on the aspects of the management of hotel customer complaints that was familiar to the participants and to obtain feedback on the knowledge-enabled model.

The interview questions were classified into the following groups:

i) concepts;

ii) customer complaint management and knowledge management practices; and

iii) complaint management mechanisms (refer to APPENDIX A: INTERVIEW QUESTIONS for details).

The interview questions provided the researcher with an opportunity to 'probe' the interviewee. This occurred in many cases when the researcher wanted the interviewees to provide an explanation or to elaborate their responses. Previous research (see Dane 1990; Merton et al. 1956) have supported the use of semi-structured interviews to provide opportunities for seeking greater depth in answering particular questions.

The questions were gradually and iteratively refined. They were pre-tested with the help of two academics and two industry employees. Through the use of pre-testing of the interview questions, the eventual questions were substantially improved in terms of the terminology used (free of academic jargon) and format (increase in clarity). Two test interviews were carried out in order to determine whether any modifications or improvements were required to the interview questions and the actual interview conducted.

4.5.3. The Conduct of the Interviews

Compared to surveys, personal semi-structured interviews have many advantages in achieving the objectives of the study. For example, follow up questions may be asked, in order to focus the attention of the respondent on the subtle and ambiguous data that could be lost in a questionnaire. In addition, there are certainly possibilities to focus on particular issues upon which the researcher feels there is a need for clarification. Moreover, the respondents can be encouraged to explain problems they have experienced in some detail. In the case of encouraging the respondents to delve deeper or to clarify their responses during the interview, the wording of questions was slightly changed if a question was not understood, of if it seemed natural to use words or formulations that were put forward by the respondent. Some of the questions that seem general were also asked with a more direct focus in light with the respondents' own experiences. Some of questions were skipped because respondents felt that the question was unfamiliar to them.

A typical interview began with greetings and then move to ask questions about general understandings on the topic. This information was then kept in the researcher's mind to effectively conduct the rest of the interview questions. As the questions were related the effective communication would occur if the researcher identified the organisation's situation in the first place. The final stage involved very specific questioning to cover points that the researcher considered important but which had not yet been discussed.

For clarifying the interview contents, the interviews were tape recorded Four of the forty-seven interviews were conducted using note taking, at the request of the

interviewees. The researcher transcribed all of the interview data. This yielded a common understanding and interpretation of respondent responses and meanings. There has been some debate as to the appropriateness of this recording technique. For example, Lincoln and Guba (1985) do not recommend recording except in unusual circumstance whereas Roberts and Renzaglia (1965) suggest that the respondent will elicit the same responses whether they are recorded or not. The overriding consideration for the current investigation was to obtain high quality and rich data to support the research objectives and to answer the research questions. Considering the time constraints, it is impossible to record the volume of interview information given by a respondent from memory, or by written methods. As a result, all interviews were recorded with the consent of the participants (except those four interviewees aforementioned).

Gaining access to the relevant domain experts is a challenge for the conduct of the research. Prior research (see Buchanan et al. 1988; Easterby-Smith et al. 2002; Johnson 1975) has concluded that researchers are more likely to gain access to knowledge when they can draw upon existing contacts. The present research draws upon existing contacts in industry and academia provided by the researcher's supervisors, and by the researcher himself. This resulted in 17 interviews in category one and 30 interviews in category two. Where applicable, the researcher sent a personal email to the target interviewees to introduce the nature of the research and the proposed interview. This included the researcher's interests and preliminary findings. These provided the researcher with an opportunity to confirm the interview time and venue, to explain the proposed themes of the interview, and the researcher's research interests and expertise. The communications were intended to encourage the interviewees to make preparations

for the interview. It was assumed that the individual interviewees would be aware of the expectations of the researcher by the time of conduct of the interviews.

The interviews were conducted in person at the offices of the participants, hotel lobbies or nearby coffee shops. Prior to the conduct of the interviews, participants were provided with a list of the interview themes. Before the commencement of each interview, the objectives and the content of the research project were explained and all interviewees were invited to clarify any concerns or issues. The instrument of the interviews is based on a list of twenty-six questions crossing concepts, theory and practice in the domain.

4.6. Data Analysis

The purpose of the data analysis is to identify attributes that are relevant to the formation of concepts, objects, and relationships to support the development and validation of the knowledge-enabled hotel customer complaint management model. The general analysis process followed three key stages of description, analysis and coding, and interpretation suggested by research (Miles & Huberman 1993; Wolcott 1994).

The first stage of the analysis simply involved summarising the transcripts of each interviewee. This first stage was completed after the interview and the transcript had been completed. Initial quality checks included a follow-up inquiry when applicable, editing, correction of errors and omissions. This was performed soon after the interviews were conducted, to ensure the information was not lost. Each interview was

summarised in a similar way. The analysis process involved bringing together and analysing all the data bearing on themes, ideas, and concepts.

Research (see Corbin 1998; Miles & berman 1993; Strauss & Neuman 2006; Taylor & Bogdan 1984; Wolcott 1994) has suggested that qualitative data analysis focuses on contents using various techniques such as

a) open coding (involving the systematic analysis of interview transcripts word-by-word, line-by-line, or sentence-by-sentence);

b) axial (involves the identification of relationships between open codes); and

c) selective coding (involves the identification of main point from the core codes).

In qualitative research, concepts formation is an integral part of data analysis and begins during data collection by coding data into conceptual categories (Patton 2002). The interpretation stage of the analysis focuses on a cross-comparison of the coded data, aimed to use inductive analysis and creative synthesis. The coding process involves bringing together and analysing all of the data bearing on themes, ideas, concepts, and interpretations related to the concepts, contents and process of knowledge in hotel customer complaint management. This study has adopted the qualitative analysis techniques in the three key stages of description, analysis and coding, and interpretation to support the identification of concepts, objects, and relationships within the domain of study.

To overcome the difficulty of dealing with large quantity of free flowing text, a database with the capability of using Structured Query Language (SQL) has been utilised to support the categorisation and comparison of the interview data. SQL is a

computer query language which can be used to execute commands on relational database to add, search, update, and to delete records from databases. It can be used for extracting information from MS SQL Server database or MS Access database. The database used for this research is a purpose designed and built by the researcher using MS Access 2003 technology. The database is capable of storing interview data, managing interview scheduling, generating analytical queries and reports. The reasons for the use of the database technology in this study is based on the researcher's expertise on building and managing databases as well as the empirical feasibility of manipulating the interview data. Other existing software, for example Nvivo or Xsight (qualitative analysis software developed by QSR international Pty Ltd) can also support the analysis of qualitative data. There are over twenty noticeable venders promoting their qualitative analysis software on the market. My supervisor and I view that although qualitative analysis software can be used to assist a researcher in managing and shaping data, it doesn't do the thinking for a researcher. In other words, it is just a tool. It is inappropriate for researchers especially within the Information Systems discipline to promote a particular software vender. The SQL-database approach employed in the research project is generic and adequate to assist a researcher to classify the interview data, find themes, and make sense of the data. Therefore, we do not see the need for the employment of a particular qualitative analysis software for this project.

4.7.Modelling

This research models the phenomenon of knowledge management application in the domain of hotel customer complaint management from a systems point of view. According to Checkland (1981), a system is simply as a label for something taken to

exist in the word outside of ourselves. There is no implication that a complaint management system has to be a computer based system, although computer based systems can provide better support for decision making in some circumstances when there is a high volume of data and a need for data analysis.

Based on an analysis of the data, an object-oriented approach has been adopted to represent the hotel customer complaint management knowledge concept and the knowledge-enabled hotel customer complaint management model. The conceptual understanding of the domain was based on the analysis of primary data, and is supported and validated by both the primary data and secondary data. As has been noted by Strauss and Corbin (1998), new findings and theories can be merged through the course of the data analysis process. In this study, the knowledge-enabled hotel customer complaint management model was developed, which emphasises the role of hotel customer complaint management knowledge in the effective management of hotel customer complaints.

4.8. Evaluation

This study describes an exploratory, interpretative field of knowledge management in the domain of hotel customer complaint management. The research approach chosen to meet the research objectives was an interpretative and qualitative one. The measures of the rigor of this study and the credibility of its findings are most appropriately based on qualitative interpretive research literature that has been developed for measuring and assessing interpretative and qualitative research. Both the primary data and the secondary data have been used for the evaluation of the study.

Evaluation in chapter 7 presents a self-reflection on assessment of the study considering the degree to which the research meets recognised principles for conducting interpretative and qualitative research. The research has been evaluated in terms of both the research methodology and the research outcome (refer to Chapter 7 for details).

Refer to Figure 1: The Research Process.
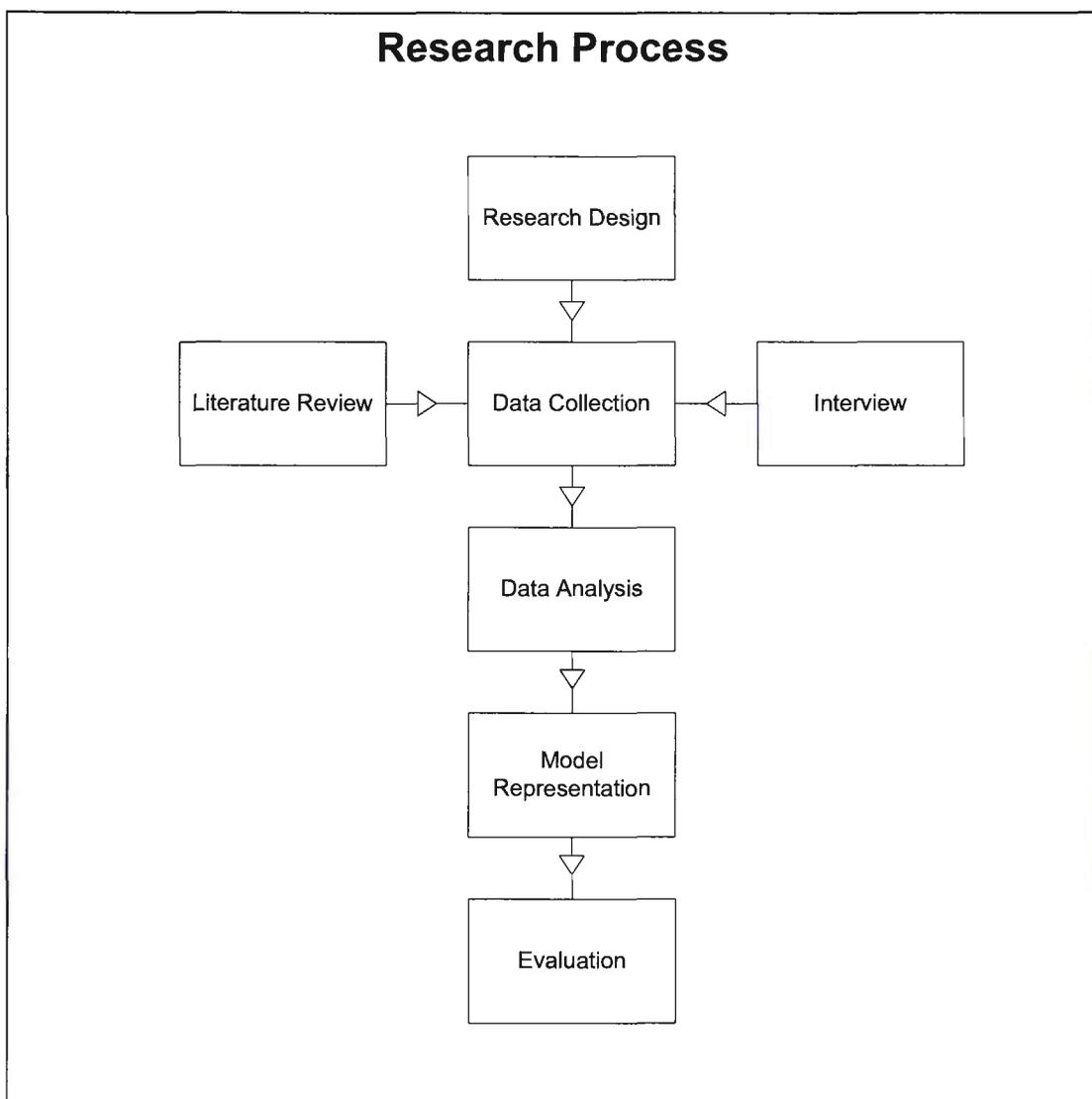
Figure 1: Research Process

4.9.Ethical Considerations

In line with the Victoria University Research Policy, a formal ethics application was lodged to the University Ethics Committee seeking approval for the conduct of interviews involving human participants. The interviews were conducted upon receipt of formal approval from the Ethics Committee. All interviewees were given an explanatory statement in plain language and a consent form prior to the commencement of the interview. All interviewees provided consent for the researcher to conduct the interviews.

Potential interviewees were provided with either

 i) a letter,

 ii) email,

 iii) phone calls, or

 iv) face to face meetings,

explaining the purpose of the study and what was being asked of them. They were given the opportunity to participate or not; an assurance of confidentiality, anonymity, and privacy; and an explanation that each participant will have the same access to the research results. The informed consent of each interviewee was gained prior to each interview. At the beginning of each interview the requirement for tape recording the interview was also explained and transcription methods were noted. No interviewee was coerced to continue his/her involvement. Each was free to withdraw at any time.

To meet privacy and confidentiality requirements for the study, all respondents and the data created from their involvement were treated with respect, and no individual or

organisation was identified in any publication. Confidentiality of the information related to the interviews including name, organisation and the attributes of the interviewees were guarded according to the university guidelines.

4.10. Chapter Summary and Conclusions

The interpretative epistemological foundations underlying the conduct of the thesis assume that knowledge is always filtered and interpreted through personal context, personality, insight and history. It also assumes that knowledge gained and individual interpretations of that knowledge are strongly influenced through social constructions. From this epistemological foundation an interpretative methodology using an interview method has been selected as the most appropriate means of conducting the research. Individually created meanings are modified and developed through interaction with other individuals in a collectively or collaboratively shaped process of interactive meaning making. Such ontological conceptions necessitate research methodologies that make sense of empirical evidence through socially constructed and mediated meanings.

Thus interviews with the domain experts in hotel customer complaint management are the principal means of gathering empirical evidence for studying the research phenomenon. Both the primary data and the secondary data are used to support the development of the knowledge-enabled hotel customer complaint management model. Most of the means used to develop the research take account of personal experience and constructed meaning. As a result, the approach is subjectivist. It works from the assumption that reality is personally interpreted and socially constructed within an interpretivist framework. This thus allows the participants in the research to exert a considerable influence on the essential questions and findings.

This study is also primarily interpretative as it assumes that knowledge is gained through socially mediated construction of sense. Individual makes sense of and create knowledge about the world around them through understandings developed through experience and interrelationship in context of situation and prior experience so that knowledge is emergent, flexible and situational rather than a fixed and predefined entity. The focus of interviews is very much upon interpreting and understanding knowledge concerns in the domain.

In explaining the methodology chosen for the study this chapter first illustrated the philosophical assumptions associated with the research. Two important paradigms were described. As this study is interpretative-qualitative as well as exploratory in nature, it is unlikely to have propositions. Instead, the study has a clear purpose stated with answering the research questions on which the success will be judged. As such, the research was considered successful and valid if the data collected allowed the findings to explain the complex nature of the phenomenon in knowledge management application in hotel customer complaint management.

After an examination of the advantages and limitations of various methods, the semi-structured interview method was chosen. The methodology included forty-seven semi-structured interviews with domain experts. This chapter discussed the selection of the interviewees, the design of the interview questions, the actual process of the conduction of the interviews, and the ethical considerations as well as how the data was analysed and interpreted.

The following chapter is to introduce what are the sources of the data used for the study; and how the date is analysed and interrelated.

CHAPTER 5: DATA ANALYSIS

5.1.Introduction

The previous chapter described the research methodology adopted for conducting this research. This chapter explains how the data was transcribed, analysed and interpreted to support the formulation of the hotel customer complaint management knowledge concept (refer to section 5.4), and the development and validation of a knowledge-enabled hotel customer complaint management model (refer to Chapter 6 and Chapter 7). The research has adopted an iterative and incremental method in collecting, analysing, and interpreting the interview data, in which the relevant data have been constantly compared against each other (using the SQL-database facility to create various queries dynamically supporting the comparison of the interview data).

The rationale for conducting the interviews, analysing, and interpreting the interview data is two fold:

 i)   to formulate the domain knowledge into a more explicit format to uncover lessons learned and best practices in knowledge management in hotel customer complaint management; and

 ii)   to convert the raw, unclassified data into information in order to systematically support the formation of the hotel customer complaint management knowledge concept and the development and validation of the knowledge-enabled model by identifying the knowledge attributes, objects, and relationships of the domain.

5.2. Data Sources

This study is an exploratory and interpretative research based on an empirical investigation involving interviews with domain experts in hotel customer service management. Primary data was collected through the conduct of 47 interviews with domain experts in hotel service management across 11 cities in five countries: Australia, China, Germany, United Kingdom, and the United States. It was conducted over a period of 19 months, from July 2005 to February 2007.

Of the 47 respondents, 28 were hotel staff and 19 were hospitality management academics. The interviews have been classified into category one and category two interviews according to the objectives of the interview (refer to 5.2.1 for details). Refer to Table 2: Summary list of interviewees for a summarised view of the constituencies of the interviewees on page 93. The interviews followed a list of 26 semi-structured questions (refer to APPENDIX A: INTERVIEW QUESTIONS). Some of the discussions between the researcher and the interviewees went beyond the scope of the description of the list of questions initially developed for the interviews. This is particularly relevant when discussing and seeking feedback on the hotel customer complaint management knowledge concept and the knowledge-enabled model.

The focus of the interviews was on knowledge acquisition and validation from the domain experts in terms of lessons learned and best practices. The interview data was transcribed, analysed and used to support the formulation of theoretical and practical understanding of the domain.

Summary List of Interviewees					
	Hotel staff (28)		Academics (19)		Total
	Category One	Category Two	Category One	Category Two	
Melbourne	3	3	2	4	12
Sydney	-	3	1	1	5
Brisbane	-	3	-	-	3
Beijing	3	-	1	2	6
Shanghai	-	1	1	2	4
Hong Kong	1	-	1	2	4
Macau	2	-	2	-	4
Los Angeles	-	2	-	-	2
Las Vegas	-	3	-	-	3
London	-	2	-	-	2
Frankfurt	-	2	-	-	2
Total	9	19	8	11	47

Table 2: Summary list of interviewees

As this research has adopted an interpretative-qualitative approach, some of the commonly practised qualitative data analysis techniques such as coding and content analysis (refer to the methodology chapter for more discussions) have been employed to enhance the rigorousness of the analysis and interpretation process. A purpose designed and built database and the SQL facilities were developed to assist in the analysis and interpretation of the interview data.

5.2.1. Categorisation of the Interviews

The interviews were a purposeful action to support the knowledge acquisition and validation for this research project. As such the interviews have been classified into two categories, according to the objectives of the interviews (refer to Table 3 and Table 4 for details).

Constituency of Category One Interviewees		
Location	Hotel Staff	Academics
Melbourne	3	2
Sydney	-	1
Beijing	3	1
Shanghai	-	1
Hong Kong	1	1
Macau	2	2
Total (17)	9	8

Table 3: Constituency of category one interviewees

The focuses of the category one were on:

i)   knowledge acquisition to enhance the researcher's theoretical and practical understanding of hotel customer complaint management knowledge; and

ii)   the development of the knowledge-enabled model.

17 of the 47 interviews were classified into category one.

Constituency of Category Two Interviewees		
Location	Hotel Staff	Academics
Melbourne	3	4
Sydney	3	1
Brisbane	3	
Beijing	-	2
Shanghai	1	2
Hong Kong	-	2
Los Angeles	2	-
Las Vegas	3	-
London	2	-
Frankfurt	2	-
Total (30)	19	11

Table 4: Constituency of category two interviewees

The focuses of category two were on:

i)   seeking feedback on the proposed knowledge-enabled model; and

ii)   knowledge refinement and validation by discussing the aspects of the domain of the study that are familiar with the interviewees.

30 of the 47 interviews were in this category.

The design and use of the semi-structured interview questions allowed the researcher and an interviewee to have an in-depth discussion of a particular aspect of the domain knowledge sensitive to the interviewee's wishes.

5.2.2. Interviewee Profiles

The selection criteria for the category one interviews (refer to table 3 on page 94) were

based on   96

i)   the domain expertise of the targeting interviewees, and secondly

ii)   the availability of the targeting interviewees.

At the design stage, 23 suitable domain experts were identified, taking into account the

limitation of resources in terms of time, location, and funding. Six of the 23 targeted

domain experts were unable to meet the researcher. 17 interviews were conducted in

category one including nine senior hotel staff with managerial or supervisory

experiences and eight senior academics with research experiences in hospitality

management. Each interview took an average of about one and half hours.

The interviews with senior hotel staff and hospitality management academics in

category one were more systematic than those conducted in category two. A relatively

lengthy pre-interview negotiation process was needed in the case of interviewees

category one. These discussions included setting up the interview time, choosing a

venue, and selecting themes and contents. By the time of the scheduled interviews, the

interviewees had been informed about the nature of the research project, and about

expectations.

The data gathered from the category one interviews were a valuable source of support

in terms of the volume and quality of the data, the conceptualisation of hotel customer

complaint management knowledge (refer to section 5.4) and the development (refer to

section 6.2 and 6.3) of the knowledge-enabled hotel customer complaint management model.

All of the nine hotel staff interviewed had held managerial or supervisory positions in the hotel industry for a considerable length of time, with respondents having an average of 13.8 years of work experience in the hotel industry. Three of the nine interviewees were at executive management level including a general manager, a deputy manager, and an assistant manager. The other six interviewees in hotels were at functional management level across different hotel operational units. The interviewee profiles are summarised in Table 5: Profiles of category one hotel staff can be found on page 98. All the nine hotel interviewees were working at full service hotels at the time of the interview.

Profiles of Category One Hotel Staff			
ID	Positions	Yeas worked in the industry	Appointments hold in the past
H1	General Manager	15	• Human resource manager • Property manager • Marketing manager
H2	Human Resource Manager	17	• Human resource manager • Training manager
H3	Deputy Manager	20	• Hotel Manager • Marketing & Sales manager
H4	House Keeping Manager	15	• House keeping manager • Coffee shop supervisor
H5	Restaurant (Foot & Beverage)Manager	15	• Executive chef • Restaurant manager
H6	Sales manager	15	• Sales manager • Cooperate sales account • Sales clack
H7	Front desk manager	15	• Front desk manager • Service clack • House keeping supervisor
H8	Assistant manager	4	• Assistant manager
H9	IT manager	8	• Engineering manager • Telecommunication manager • Engineer

Table 5: Profiles of category one hotel staff

The eight academics interviewed were identified through academic journals in hospitality management related fields. The contacts with the eight academics were established through my supervisors, or acquaintances known by the researcher during conferences or social occasions. The relevance of their research to hotel service management, particularly hotel customer complaint management was a primary factor for selection; although the availability, the willingness to participate, and time, place/location, and funding constraints might have also affected the result of selection outcome.

With reference to Table 6: Profiles of category one academics on page 100, five of the eight interviewed academics under this category were either employed at professor or associate professor level at a university or a research institute. The other three interviewees were university senior lecturers. Three of the eight academics interviewed were former hotel industry practitioners. All of the academics in this category have journal publications in either service marking, service management, or hospitality management related areas.

		Profiles of Category One Academics	
ID	Positions	Searchable journal publications	Research area
A1	Senior Lecturer	> 3	• Human resource management • Hospitality management • Complaint management
A2	Senior Lecturer	>3	• Marketing • Service management • Hospitality management
A3	Professor	> 4	• Marketing • Hospitality management • Hotel management
A4	Professor	>4	• Tourism • Tourism management • Travel
A5	Associate Professor	>4	• Management • Governance
A6	Senior Lecturer	>4	• Hospitality management • Hotel management
A7	Professor	>4	• Governance • Tourism management
A8	Professor	>4	• Hospitality management • Service management

Table 6: Profiles of category one academics

The research project also conducted 30 interviews under the category two focusing on seeking feedback and refinement of the knowledge-enabled customer complaint management model. Most of the interviewees under this category were encountered and known by the researcher over the cause of conference or business trips. The dialogue between the researcher and the interviewees focused upon aspects of the domain that the interviewees were familiar with. The feedback gathered from these interviewees has contributed to the refinement of the concept and the model developed. Refer to Table 4 on page 95 for details. Of the 30 informal interviewees, 11 had an hospitality and tourism management academic background, and 19 of them were working for a hotel related organisation.

5.3. Analysis and Interpretation

The data analysis and interpretation process was assisted using the relational database technology through SQL (Structured Query Language, refer to section 4.6) commands. Querying is a useful technique to extracting information from databases using specific computer recognisable languages. In this research, the SQL was used for extracting information from the database of raw interview data. The interview data was analysed and interpreted in the context of knowledge management applications in hotel customer complaint management. The data analysis included a two-phase process of

i)   data standardisation, and

ii)   data comparison and interpretation.

5.3.1. Data Standardisation

The data standardisation phase is the initial step of the data analysis and interpretation process. At this stage, the research focused on producing a detailed transcription of the interview data. All of the interview data were transcribed into a uniform format as questions and answers. Except for the four interviews that occurred using a note taking method, all interviews were audio recorded. All audio interviews were first transcribed in text format shortly after the interview was completed.

Every interview was allocated an identification number (e.g., *1T1* denotes the category one test interview number 1, *1A7* denotes the category one academic interview number 7; *2H5* denotes the category two hotel staff interview number 5), so various queries can be designed and executed during the analysis and interpretation phase.

Wherever appropriate, commonly used academic terminology was inserted into the interview data source in a square bracket (to distinguish the researcher's interpretation from the original interview data) to support the analysis and interpretation phase. This approach is similar to the frequently used qualitative data coding process discussed in section 4.6, but with an enhanced capability in terms of being able to keep the original source of data free from rephrasing by a researcher. There is one of the powerful features that the SQL-Database provides.

This research has identified and confirmed that the SQL-data base approach can eliminate the need to rephrase interview data by a researcher, whilst most of the out of shelf qualitative analyses software require the qualitative data being rephrased using

terminologies by the users to support the categorisation process. In many instances, the practice of rephrasing data might increase the risks of losing the richness of the qualitative data presented to a researcher, and potential biases of individual researchers in interpreting the qualitative data. By contrast, the SQL-database approach can potentially reduce the subjectivity imposed upon the data by a researcher at an early analysis stage. In this approach, the raw data is not modified or rephrased during the early analysis process.

During the process of data standardisation, each of the interviews was transcribed into a similar format. For example, the interview 1A8 (category one academic number 8) with question 6 was recorded into the following format:

1A8 Q6: What kinds of knowledge are important to the effective management of customer complaints in hotels?

"in my view the most important knowledge that a hotel needs to have in relation to the management of customer complaints is [the ability of] being able to amend the problem situation and take actions to improve the quality of business operation" (1A8).

With this example, the term *ability* within the square bracket is inserted by the researcher at the standardisation process. It can be used in the analysis to increase the capacity of the SQL-database approach for the support of the processes of categorisation and conceptualisation. Using a square bracket around the term will allow the researcher to distinguish the inserted terminologies and the original thought of the

interviewees in the context of the interview taking place. The original data has not been rephrased during this process.

Following the completion of data formatting into the text format, each of the completed transcriptions was incorporated within the purpose designed and built database. Figure 2 is a snapshot of the interview data entry form. It allows the researcher to record all the individual interview data into a uniformed format. As this research has a relatively manageable quantity of data (47 sets of interview data), all of the data input was completed manually. Alternatively the data can be imported into the database (data format conversion maybe needed) from various data sources such as text format, spreadsheet format, HTML, and other databases.

Figure 2: A snapshot of the interview data input form

5.3.2. Data Comparison and Interpretation

Following the completion of the initial data standardisation and input phase, the next step was the process of identifying key concepts, objects and relationships through an iterative qualitative data comparison and interpretation. In common with the frequently used qualitative coding processes such as open coding, axial coding process and selective coding process (refer to section 4.6), this research identifies patterns and concepts through the comparison, categorisation, and interpretation of the interview data. The conceptual formation of concepts, objects, and relationships is based on the researcher's interpretation of the interview data. It is based on the context and the quality of the data, rather than the frequency of the appearance of certain terms from the data, on which quantitative data analyses often rely.

Utilising the database's SQL facility to group and regroup data dynamically into different categories during the progress of the interviews assists the data analysis and interpretation process in this research. The use of the SQL-database requires the users to have considerable knowledge of database and SQL management but provides good facilities for users to dynamically support the categorisation and conceptualisation process. The main queries being designed and used at this stage include:

By Interviewee

This query groups answers by individual interviewees in order to seek the overall picture of a particular view point of an individual interviewee[1].

---

[1] The SQL for extracting the data from the interview database for the aforementioned purpose is *SELECT [Interview details].Interview ID ? FROM [Interview details]*; the ? denotes the ID of

The information produced by this type of query has also been used to weight the importance of relevant views from each individual when views from different participants on a particular topic have been contradictory or conflicting. These contradictory or conflicting views are not an obstacle, but rather a desired finding for many social phenomena that occur in many social science studies.

In the domain of modelling, a modeller is often required to interpret the data at some stage during the process to conceptualise the domain model. The rationale for this assumption is that if a particular interviewee has shown a good overall domain understanding, then his or her view on the domain model might potentially carry more weight than an interviewee whom has shown less overall understanding the domain.

For example, the following snapshot is the result of the SQL when *? = 1H7*, which gives a comprehensive view of the understanding on the domain area that the hotel practitioner number 7 has under category one.

How do you define the terms of customer complaint and customer complaint management? (Interview question 1)

"In my working time, I have seen a lot of changes in the way which customers raise their complaints. 15 years ago when I started working in the hotel industry then there was not many customers' complaints for small things, but now customer complaints can really be anything, like this hotel is a four and half star rating hotel with most of

---

the interview; and the Interview details denotes the name of the table in the database, where the interview data is stored.

the repeating customers who are business travellers, but they can be very picky too. So, we have to treat everyone seriously if we want to keep them" (1H7).

"Customer complaint management is about mange our hotel staff to make the hotel guests feel that we are on their side and we will need to let the guests know that we are trying our best to help them to resolve whatever the problem is"(1H7).

With knowledge now widely recognised as a key resource and source of competitive advantage many companies regard themselves as knowledge-based and have adopted strategies to facilitate this. Do you see it as relevant to your hotel? (Interview question 2)

"I think we are a knowledge-based company, as you might have known that this hotel chain has its own computerised reservation system, and customers can confirm their booking via either travel agencies or website instantly. We do not have staff with doctorial level qualifications yet, but we have quite a few staff with masters qualifications here. Now most of the supervisor level staff have a degree or advanced diploma in our hotel. We treat knowledge seriously."(IH7).

... [Omission of data between questions 3 to 25]

What are the main communication channels for customer complaint handling in your hotel? (Interview question 26)

"We have a commitment to our customer satisfaction program. If a customer is not happy with whatever the services received, she or he can just pick a phone talk to our staff and we will try to solve it. Most of customers in this hotel use phone to make enquiries, also we have other channels such as comment cards in guest rooms. We also have a web based customer feedback system, but not many customers use this method"

(1H7).

By Question

This query is to grouping answers by individual topic questions to make differing interviewees' views comparable to any given question or aspect of concern[1].

The execution of this type of query has allowed the researcher to compare different views amongst the interviewees. These views can relate to an individual question or aspect in order to enhance the understanding of concepts, objects, and relationships in the domain area. For example, when running a query *?=Q 4,* the following information can be produced.

Q4. How would you define knowledge in the context of hotel customer complaint management?

"knowledge is about the capacity of effective managing customer complaints" (1A1).

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[1] The SQL for extracting the data form the interview database for this purpose is *SELECT [Interview details].Q ? FROM [Interview details];* the ? denotes the ID of the question being queried and the Interview details denotes the name of the table in the database, where interview data are being stored.

"... sum it up, it is know how, a hotel knows how to manage customer complaint is the real knowledge for example, that would be unique knowledge if a hotel know what its customers want"(1A2).

"Everything is knowledge. But maybe staff's ability to handle customer complaint is more important..."(1A3).

"it should be part of the organisational knowledge. That can be related to human knowledge such as hotel staff, and other knowledge assets such as complaint handling policies, and so on" (1A4).

...

... [Omission of data above]

By Term

This query groups views of interviewees by matching key terms to support the formulation of concepts, objects and relationships[1].

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[1] The query for extracting the data form the interview database for this purpose is *SELECT [Interview details].Q ? FROM [Interview details] WHERE (((([Interview details].Q?)="term n"));* the ? denotes the question ID, the term n denotes any given term being queried, and the Interview details denotes the name of the table in the database.

The execution of this type of query allows the researcher to investigate the views of individual interviewees relating to certain terms. Querying by terms is a dynamic process to identify relationships among the data. The process helps the researcher to enhance his understanding of concepts, objects and relationships within the domain. The following query provides an example:

SELECT [Interview details].Q4 FROM [Interview details] WHERE (((([Interview details].Q4)="ability")) OR (((([Interview details].Q4)="staff")); the *4* denotes question (*How would you define knowledge in the context of hotel customer complaint management?*) *and* the *"ability" or " staff"* are the two terms being queried.

This query can produce information relating to how the term *ability* or *staff* has been used. When adding the synonym *"capacity"* as an optional parameter to the query, the query will return more information from the database.

A variation of the aforementioned query as shown below, will, for example, be able to produce a set of different views, in which the result will be returned is the interviewees who have linked the terms *ability* and *staff* together in the contexts.

SELECT [Interview details].Q4 FROM [Interview details] WHERE (((([Interview details].Q4)="ability")) and (((([Interview details].Q4)="staff"))); *the 4* denotes question (*How would you define knowledge in the context of hotel customer complaint management?*) and the *"ability" or " staff"* are the two terms being queried.

The capability of making multi key words/ terms by using the SQL facility has made the analysis process a dynamic one, in which different views under any given criteria can be produced to support the classification and conceptualisation.

Appendix B summarises the SQL commands used to support the analysis and interpretation of the interview data. Compared to other approaches such as using off the shelf qualitative analysis software or manual comparison of interview data, the use of the SQL-database gives a researcher a greater degree of control over the type of data and how the data is compared, without the need to rephrase the raw data. However, the use of the SQL-database approach requires a researcher to have competent practical knowledge on database engineering and SQL.

5.4. An Emerging View of the Needs of Knowledge Management in Hotel Customer Complaint Management

Both the resource-based and knowledge-based views of the firm argue that organisations are knowledge repositories and generators. Both views can also provide a competitive advantage for the sustainable development of an organisation: to identify, store, and use organisational knowledge. These capabilities are unique and difficult to imitate. Organisations using them have a superior performance and competitive advantage.

In this view a hotel's capabilities and competencies in customer complaint management may occur within hotel organisational routines and structures, in employees, and in hotel information systems. Although this view does not automatically mean that knowledge management is a silver bullet for tackling management issues relating to

customer complaints, it does recognise to knowledge management applications as a tool, and process of innovation that might lead long term and sustainable development of customer complaint management for hotels. Both the resourced-based view and the knowledge-based view of hotel customer complaint management assume that the organisation's unique resources, processes, or abilities may confer a competitive advantage over competing hotels within turbulent marketplace.

From the interviews there is little evidence suggesting that a pragmatic approach to managing knowledge in customer complaint management has been common place in hotels. However, the interviews with domain experts in both the hotel industry and academics have indicated that knowledge management in areas such as customer knowledge, employee knowledge, complaint handling policies and procedures, internal customer complaint management processes and information systems are generating competitive advantage for individual hotels.

Customer knowledge is increasingly viewed as an organisational asset and the understanding, acquisition and application of this knowledge is strategically important for those seeking competitive advantage. Feedback from both hotel industry practitioners and from hospitality management academics suggests that customer knowledge is one of the sources of organisational innovation and quality improvement in hotel. For example, some of practitioners and academics in the hotel industry have commented that:

"...the hotel industry is very much a matured industry; we need to be innovative in order to compete with others..." (1H3).

"... we make changes to the services we provide our customers if a trend and demand are clearly emerging from the feedback of guest comment cards..." (1H8).

"...the ability of learning from its own mistakes is a competitive advantage for hotels..." (1A8).

As important as customer knowledge, is the capacity and competency of hotel employees to manage customer complaints. They are responsible for delivering the provision of services to customers. The reliance on human service elements has always been one of the unique characteristics in quality service delivery for hotels. Hotel management has long been concerned with the effect of losing key personnel to their competitors. For example, some of the interviewees have commented:

"... that hotel employee salary is one of the largest spending areas for a hotel, it could be easily reached one fourth of the total expenditure of a hotel. We do not want to lose our employees to our competitors especially some of the experienced long serving employees as they are part of the hotel; we have investment on them...we spend a lot of money every year just to train the new employees to be able to do their job..."(2H11).

"... we do not have a knowledge management project yet, but we regularly employ consultants to conduct training courses for our staff to improve service standard..." (1H2).

The organisational customer complaint management policies, principles, management procedures and various computerised information systems are valuable assets for hotels. Lessons learned and best practices gathered in the interview process suggest that

the importance of customer complaint management in hotels have been rated at a very important level. These are a few of the comments made by interviewees:

"...customer complaint handling is important for the customer retention program, in fact, my view for this is that the effectiveness of a customer complaint handling system could be simply measured by whether a dissatisfied customer comeback to our hotel in the future or not..." (1H1).

"... every one needs to contribute the best service standard possible in our hotel, but new employees are not generally required to deal with any serious customer complaints. By saying that, I did not mean that the new employees would not respond to customer complaints. Some of the customer complaints can be easily dealt with, for example the request of changing a not well polished water class at a restaurant, so every employee serving at the restaurant is supposed to be able perform the task, and they know they need to apologise for the mistake to their customers as well; but sometimes the customer complaint can be difficult to deal with. For example, a conference guest makes a complaint about the quality of the banquet food to a newly appointed employee, I would prefer the new employee to talk to his or her supervisor for advice..." (2H2).

"... we used a lot of customer comment cards, and did get some valuable feedback..." (2H9).

"...we record the customer complaints and resolutions in a spreadsheet. ...we also try to make some special offers to target those who have had a history of complaint..." (1H4).

Although the interviews did not identify the existence of knowledge management projects in the 28 hotels (please refer to the Table 2), some of the best knowledge management practices such as adopting information systems to support customer complaint management, staff training initiatives, and the use of customer complaint management data occur across the spectrum of hotels: from top end five star hotels to three star tourist hotels.

The hotel industry has experienced of massive investment in information systems. In fact, the hotel industry is one of the few industries that has adopted very advanced technologies: from global reservation systems, online reservation systems, customer relationship management systems, to micro property management systems. Data gathered from various database systems can produce rich sources of information relating to customer profiles and market trends, and quality of services provided by a hotel. In particular, the capability of sharing and utilising data and information between hotels within a chain or group has improved dramatically during the last decade. A few pertinent comments made by the interviewees are provided:

"A customer should not be surprised to receive a welcome basket or other complementary treatment on an arrival to a hotel, if the hotel chain's database systems have identified that the customer is more valuable than others..." (2H12).

"... of course, customer complaint management is important, even at board level meeting we need to provide monthly report to..." (1H8).

"...any innovations that may potentially lead to the effective support for the management of customer complaints will be valuable to the industry..." (1A7).

Considering the operational environment of the hotel industry (refer to section 3.3), the effective management of hotel customer complaint management is strategically important for sustainable development. Internally, there is high staff turnover rate, a high casual and seasonal employment, a high percentage of lower skilled workers, a high dependency on information technology and a poorly paid workforce. External influences include the threat of shrinking customer loyalty and increasing customer sophistication, shrinking information asymmetry, an increasing emphasis on specific marketing segments, changing customer preferences, increasing globalisation and collaboration, and the development of the consumer right movement. The majority of the interviewees rated customer complaint management in hotels as very significant. Some interviewees indicated that issues related to customer complaints are continually being discussed at board level meetings

In this research hotel customer complaint management knowledge refers to the capacity and competency that a hotel needs to perform the effective management of customer complaints. For the knowledge per se, the knowledge related to the management of customer complaint in hotels exists in both explicit and tacit forms.

The tacit aspect of the knowledge in the domain refers to the hotel customer complaint management knowledge that exists primarily in the head of individuals (e.g., customers and employees) and is difficult to articulate and share. Individuals often acquire this aspect of knowledge through experience. The explicit aspect of the knowledge in the domain refers to hotel customer complaint management knowledge that can be

codified, stored and shared. This form of knowledge often exists in the form of knowledge artefacts such as complaint management policies, procedures, and systems.

These two types of knowledge are equally important. Tacit knowledge is practical knowledge that is a key to getting things done, based on organisational norms and individual experiences. For example, an experienced hotel concierge might well be in a position to make a dissatisfied guest happy by letting the guest to feel that the hotel is treating him or her very seriously and with respect. But these kind of practical skills are not easily to be transferred from one to another. However, the tacit knowledge of an employee may be lost forever when he or she leaves if the relevant knowledge has not been effectively managed and codified. In many complaint-handling situations, valuable and useful individual employee's knowledge is tacit rather than explicit. Thus, a key element of managing such knowledge is not only finding ways to communicate this kind of tacit knowledge into explicit knowledge but also finding where knowledge is rooted and where the primary sources of knowledge reside. Explicit knowledge defines the competencies and the knowledge assets of a hotel independent of its employees. This type of knowledge often exists in a hotel's complaint management policies, procedures, and organisational structures.

5.5. The Hotel Customer Complaint Management Knowledge Concept

The object-oriented theory has been adopted to represent hotel customer complaint management knowledge. The object-oriented theory consists of a set of principles and methods which support system analysis, design and software development (refer to

section 2.4). This research adopts the conceptual perspective of the object-oriented theory to model the hotel customer complaint management knowledge.

In accordance with the object-oriented theory, the hotel customer complaint management knowledge has been modelled as a superclass, which represents a special type of knowledge relevant to the management of hotel customer complaints. To make the hotel customer complaint management knowledge more explicit and applicable, this research has modelled the knowledge into four subsets include:

    i)   dissatisfied customer complaint management knowledge;

    ii)   employee customer complaint management knowledge;

    iii)   supplier customer complaint management knowledge; and

    iv)   structured hotel customer complaint management knowledge.

The notation used for the representation of the knowledge concept has adopted the Unified Modelling Language (UML). Refer to Figure 3: A hotel customer complaint management knowledge concept on page 119. The arrowhead is pointed from the subclasses (i.e., the dissatisfied customer knowledge class, the employee knowledge class, the supplier knowledge class and the structured knowledge class) to the superclass (the hotel customer complaint management knowledge class). The structured knowledge class has been modelled as an aggregation relationship (a *part of relationship*, e.g., class A is part of class B) with the hotel customer complaint management knowledge class. The structured knowledge class represents the artefacts of the domain knowledge, such as complaint management policies, procedures and systems.

In this research, the aggregation relationship is treated as a constrained form of association (essential kind of relationship). It has "by reference" semantics, that is the hotel customer complaint management knowledge might not physically contain the structured knowledge. The structured knowledge is the knowledge artefacts resulting from a systematic management of the hotel customer complaint management knowledge.
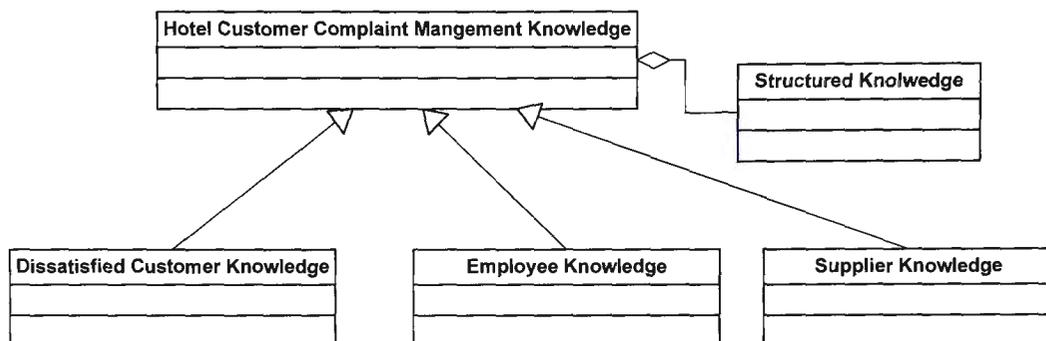
Figure 3: A hotel customer complaint management knowledge concept

This representation promotes and permits the users to not only apply the notion of knowledge management at a strategic level, but also use the knowledge artefacts at a practical level (refer to Chapter 6). The following sub sections discuss the characteristics of the each of the four subsets knowledge and relationships between the sub classes knowledge (i.e., the dissatisfied customer knowledge class, the employee knowledge class, the supplier knowledge class, and the structured knowledge class) and the superclass knowledge (the hotel customer complaint management knowledge class).

There is a generalisation and specialisation relationship between the hotel customer complaint management knowledge and the four subsets of the knowledge. The four

subsets of the knowledge are interrelated and interacted through the process of the management of customer complaints. As far as knowledge management theory and practice are concerned, the effective knowledge identification, sharing and using within the domain of customer complaint management may be considered as capacities and competencies. These may create sustainable competitive advantages for hotel organisations.

5.5.1. The Dissatisfied Customer Knowledge

The dissatisfied customer knowledge (i.e., the short form of the hotel dissatisfied customer complaint management knowledge) class has been modelled as a subset of the hotel customer complaint management knowledge class. It denotes that the dissatisfied customer knowledge is a specialisation of the hotel customer complaint management knowledge. It inherits common characteristics (e.g., tacit vs explicit, assets, and strategy, etc) and potential knowledge management activities (e.g., knowledge identification, creation, share, and use, etc) of the superclass.

A dissatisfied customer can be a buyer, a payer or a user. A buyer refers to someone who purchases the hotel services, a payer refers to someone (or some group entity) who pays for the hotel services and a user refers to someone who consumes the hotel services. It is possible that a dissatisfied customer can have all the three characteristics in the event that the customer purchase, pays and consumes the hotel service by himself or herself. The classification of the dissatisfied customer complaint management knowledge can help in the effective management of hotel customer complaints by

linking the customer complaint management to knowledge management activities. For example,

"although all comments and feedback are useful to a hotel, in some instance the comments and feedback from some particular type of customers might have more weight than others and need to be addressed more urgently and prioritised, for example, when you as a conference participant have an enquiry..." (2H8).

"we do staff training regularly.." (1H3).

The dissatisfied customer knowledge is the knowledge about the dissatisfied customers, together with the management of customer complaints, and the associated quality improvement by the concerned hotel. The knowledge comes from the dissatisfied customers through interactions between the customers and hotels. Data and information, the source of the knowledge, related to the dissatisfied customers can be found in various sources such as a hotel's reservation systems, property management systems, point of sale systems, relationship management systems, and other organisational documents or systems. The identification of the dissatisfied customer knowledge occur through either a hotel's own customer complaint management process or through knowledge acquisition from external entities. Nowadays, it is not uncommon for a hotel to have a specifically designed logbook (either a computerised or a physical notebook) to record the incidents (data and information) relating to customer complaints. The range of data recorded varied from hotel to hotel generally includes: date/time of the incident, what was reported, to whom was the incident reported and the solution. For example:

"...the individual hotel's logbook on customer complaints and other feedback such as comments cards are being sent to the headquarters for analyses regularly..." (1H2).

" we has removed all the chargeable items from the minbar in guest rooms following guest feedback and our in house research. Now we only provide a couple of bottle of water (they are free) to our guest in the mini bar. We also provide discount voucher to our guest, which can be used in the hotel bar. The bar sales has been good since then". (2H7).

These are practical examples. The ability to acquire knowledge from dissatisfied customers gives a competitive advantage to hotel organisations. Most of the domain experts being interviewed believe that customer complaints can be an enormous asset, and may be one of the important indicators on how well a hotel is meeting its clients' needs. This feedback reconfirms the research findings that a customer complaint in hotel often indicates an expectation gap between a customer and the services provided by a hotel. It can often point out the weakness of the business operation. Thus it leads to quality improvements for hotels. In addition to having feedback about the product and services from the dissatisfied customers, hotels rely on the knowledge from dissatisfied customers to take action in maintaining the confidence of the dissatisfied customers about products or services.

Most hotel practitioners see that it is important to retain customers. Aside from savings on marketing, the repeating customers are easier to serve, as they are already familiar with the products and services. Several domain experts shared a common view that repeat customers are more likely to know whom to contact when a dissatisfied situation arises and have reasonable expectations in terms of the outcomes related to their

enquiries or complaints. On this basis, the probability and speed of resolving customer complaints is improved if a customer knows how and to whom to complain.

To extend this view to a more explicit knowledge management view-point, it is important to know not only customers' complaint behaviours, but also in conveying the hotel's message. There is no empirical evidence regarding costs and resources associated with such an approach.

A complaint often reveals an insight about the gap between the expectations of the dissatisfied customer and the product or service provided by the hotel. Smart hotels use feedback from dissatisfied customers to improve their quality of products and services. At the same time they use new marketing information to impress their customers. In the domain of customer complaint management, dissatisfied customer knowledge can have two dimensions the knowledge flow from the dissatisfied customer and the knowledge flow for the dissatisfied customer. In a customer complaint-handling encounter, the dissatisfied customer reveals feedback about the bad products and services received (which most organisations try to use to improve their future products and services), but also hints for a desired solution.

5.5.2. The Employee Knowledge

The employee knowledge (i.e., short form of the hotel employee customer complaint management knowledge) class has been modelled as a subset of the hotel customer complaint management knowledge class. The hotel employee knowledge refers to the competencies that the employees have in relation to the management of customer

complaints in hotels. This subset knowledge is a subset of knowledge that exists in a collection of individual employees of a hotel. In a hotel, the employees of the hotel not only contribute to the hotel's complaint management knowledge, but also advance their own knowledge experiences as a result of participation in the management process of customer complaints.

Without the support of hotel complaint management policies, procedures and systems, the hotel employees will not be able to deliver consistent quality services to the customers of the hotel. It is equally important to realise that the hotel employee can make a difference in terms of meeting customers' expectation: especially in situations such as customer complaint handling. Many domain experts who have strong views on the need for systematic support in customer complaint management have supported this view. They argue that good management policy and procedures can assist employees with limited experience to deliver quality services to meet customers' expectation. For example,

"it is important to provide consistent quality of services across a hotel chain in different cities and countries, although it is not always practical...."(2A3).

"the rationale of putting money and resource into staff training program is that quality service including customer complaint handling can be or hopefully be improved.." *(1H3).*

Others take the view that even in the McDonald's approach, which highly values standardisation and job specification, the quality of customer services, including complaint handling, can still vary between different employees. For example,

"...it would be difficult for me to see if any systems can be really useful if the employees are not motivated and empowered to deal with the daily customer complaints. The real problem facing customer complaint management maybe lays on how to support and empower the frontline staff in that regards..." (1A3)

The ability of an individual employee will depend upon education, training and work experiences. The employee thus develops personal knowledge. This set of knowledge will not be available to a hotel if the employees resign and there is no systematic knowledge codification practice within the hotel. The cost and implications of knowledge codification might discourage a hotel from pursuing this path. Some of the interviewees suggested that the successful resolution of customer complaints relies not only on well-designed rules and policies but also personal skills developed by the hotel employees.

The capability and competency of individual employees in relation to the management of hotel customer complaints are assets for hotels. The quality and the applicability of the employee customer complaint knowledge grow when the employees have the motivation and willingness to support the knowledge capture and sharing within the hotel. The flow of knowledge goes both ways: hotel employees not only contribute to the hotel's customer complaint management knowledge, but also learn and receive knowledge support from the hotel. For example, encouraging employees to undertake work rotations and formal and informal work related training, is a way to supply knowledge to the employees to improve performance in a customer complaint related situation.

5.5.3. The Supplier Knowledge

A supplier is a product or a service provider who provides services or products to a hotel. The supplier knowledge (i.e., the short form of the hotel supplier customer complaint management knowledge) has been modelled as a subset of the hotel customer complaint management knowledge. The supplier knowledge refers to the knowledge about suppliers relevant to the management of customer complaints.

Outsourcing and collaboration within the hotel industry as well as in wider economies, and various distribution channels has provided enormous opportunities, but also challenges to the effective management of customer complaints. From a theoretical perspective (refer to section 3.4), the suppliers who provide services to hotels (e.g., the laundry service company, food delivery company, and travel agencies, etc) are the primary stakeholders and problem holders in the hotel customer complaint management as well as the dissatisfied customers, the hotel employees, and the hotel.

The effective management of customer complaints needs the support and collaboration from suppliers when the complaints are directly or indirectly related to the service providers. Moreover, a hotel needs the knowledge about the products, services, and management of a supplier in order to build a sustainable relationship. The effective management of supplier services is not only about optimising the selection of the supplier to guarantee the supply, but also upon the development and care of the supplier relationship and solving problems.

The interviews with the hotel practitioners and academics in hospitality management revealed a trend that coincides with a tendency of alliances and co-operation in all

economic sectors and in all steps of the value added chain. More specifically hotels are no longer having to own every thing in order to make a profit. It is possible to outsource some of the functions or services to others, but usually no core competencies. Customer complaint management is a core competency for hotels, which are usually management by hotels themselves.

At the top level, big funds management can acquire hotel companies through stock market or private acquisition to become the owner or the major shareholder in order to influence the way the hotel operates. At the management level, increased competition levels in the industry and the general trend of collaboration between companies (especially in an interdependent supply chain) in service industry is often referred to as distribution channels. For example, travel agencies, global distribution channels, service operators such as laundry service companies and house keeping companies. Some of the interviewees shared concerns on the issues related to the phenomena of outsourcing in the industry. Although there are perceived advantages of taking this approach, some practitioners have argued that issues such as cost, quality of service, flexibility, and communication might hinder the effectiveness of service management in practice. For example,

"... there are certain risks associated with outsourcing practices in the industry, for example, the over reliance from suppliers in relation to quality control, we are having trouble with one of our suppliers... "(1H1)

"... customers will still complain to our hotel even the problem is created by the travel agency and we need to deal with that... " (2H8).

The development of new partnerships, such as outsourcing, makes customer complaint management more challenging, particularly when it involves cross cultural and cross national boundaries and cross organisation issues. Some domain experts have suggested that establishing a direct communication channel between a hotel and its suppliers is an important step to speed up the resolution of customer complaints. The advance of information technology in the hotel industry provides further support for communicating between a hotel and its suppliers.

5.5.4. The Structured Hotel Customer Complaint Management Knowledge

The structured knowledge (i.e., short form of the structured hotel customer complaint management knowledge) has been modelled as a subset of the hotel customer complaint management knowledge class, through the use of an aggregated relationship. The hotel structured knowledge refers to the knowledge artefacts: such as complaint management policies, procedures and computer systems. It is often the result of the systematic codification of knowledge from customers, employees and service providers.

A knowledge-enabled approach in hotel customer complaint management relies on a hotel's ability to exploit the customer complaint management knowledge; to enhance the effectiveness of customer complaint management in hotels. The knowledge-enabled approach in customer complaint management allows employees who handle customer complaints to get support when seeking suitable solutions. This often can be achieved through comparing the current complaint management situation with past cases. The

knowledge-enabled approach can potentially enhance the consistency and efficiency of the management of customer complaints. As one of the academics has argued

"...the empowerment of employees needs the guidance and support from the hotel..." *(1A3).*

The customer complaint management related data is the basis of the structured customer complaint management knowledge. The data and information can be systematically acquired from customer complaint management processes. They can be documented in a hotel's databases, or a complaint logbook. The data from a dissatisfied customer can be collected through various channels: such as face to face, a phone complaint handling situation, website feedback and other sources (such as from a hotel's customer management database and other systems). A knowledge-enabled approach also promotes the use of customer complaint management related data, information and knowledge between parties. The customer complaint management knowledge will grow when more and more people use it. The structured knowledge is the basic form of knowledge that can be shared between people in the domain.

This knowledge is different from the other subsets of the hotel customer complaint management knowledge. The structured knowledge is a form of knowledge that is more stable (explicit) and resilient (independent from employees, customers, and suppliers), than other knowledge. It thus might be able to minimise the potential loss of organisational customer complaint management knowledge when some of the key employees leave a hotel. The structured knowledge can also provide a platform for a hotel for obtaining and sharing other subsets of the knowledge (i.e., customer

knowledge, employee knowledge and the supplier knowledge) discussed in this chapter.

5.6.Chapter Summary and Conclusions

The purpose of the data analysis, interpretation and conceptualisation is to make the domain knowledge more explicit and applicable. This research has adopted some of the most widely used qualitative data analysis techniques including data description and data comparison, to support the interpretation and conceptualisation of the domain knowledge. The SQL-database approach used in this research is innovative.

The data analysis has shown that although there appears to be still a lack of systematic knowledge management applications in hotel customer complaint management, it appears that the importance of managing hotel customer complaint management knowledge has been recognised by not only academics, but also by industry practitioners.

The hotel customer complaint management knowledge can be tacit or explicit. The former relates to *know how* such as how an individual resolves a customer complaint related problem. It is more difficult to articulate than the latter, but is important in the process of customer complaint resolution and complaint management. This is especially true in an uncertain problem situation, which often requires the problem holders to make certain decisions relying more on experiences in interpreting hotel complaint handling policies and procedures.

An employee's ability to apply the hotel complaint management knowledge pertaining to interpreting rules, procedures, and systems in a problematic situation might ultimately improve the customer complaint resolution process. This kind of tacit knowledge is often learned through experience, informal training and social interactions between knowledge holders. The latter is often associated with structured complaint management knowledge such as hotel complaint handling policies, procedures and systems that can be accessed and shared among employees, the dissatisfied customers, and the suppliers. This kind of knowledge can be acquired through formal training.

The explicit customer complaint knowledge can be particularly important for delivering consistent service quality to meet customer expectations, especially as hotels are human oriented-organisations. The quality of service depends on the performance of every employee. In this context, the better the sharing of explicit customer complaint management knowledge the better the employees are equipped to perform customer complaint handling tasks. The development of the explicit dimension of the hotel customer complaint management knowledge can also provide an effective communication channel that might facilitate knowledge acquisition and use between the problem holders involved in the customer complaint management situation.

The representation of the hotel customer complaint management knowledge has adopted the object-oriented theory. The hotel customer complaint management knowledge has been modelled as a superclass. The superclass consists of four subsets of knowledge namely the dissatisfied customer complaint knowledge, the employee knowledge, the supplier knowledge and the structured knowledge. The next chapter will describe a knowledge-enabled hotel customer complaint management model,

which promotes the identification, creation, sharing and utilisation of the hotel customer complaint management knowledge.

CHAPTER 6: MODEL REPRESENTATION

6.1. Introduction

The previous chapter discussed how the interview data was transcribed, analysed and interpreted. In his chapter the researcher presents the knowledge-enabled hotel customer complaint management model which adopts the object-oriented theory and the UML notation. The knowledge-enabled model prompts the application of the hotel customer complaint management knowledge in complaint management. It will be discussed in both of an operational perspective and a conceptual perspective.

Within the operational perspective, the knowledge-enabled model represents the potential users in relation to the goals and activities. Within the conceptual perspective, the knowledge-enabled model depicts the pertinent attributes, objects and relationships among the objects. The two perspectives are illustrating different aspects of the same model.

6.2. Operational Perspective

Three dimensions of activities have been identified:

i)   handling customer complaints,

ii)   analysing customer complaints, and

iii)   exploiting customer complaints.

These activities have been represented by a domain model with the operational perspective using use cases modelling techniques.

Use case modelling is widely used in object-oriented system analysis, design and implementation (refer to 2.4 for details). It is not however confined to the object-oriented paradigm. A use case is a form of graphical representation to describe a domain problem situation. Typically, use cases are modelled through the use of a dialogue between an actor and a system. An actor can be someone such as an employee, a customer, a manager, or something such as an external object/entity (e.g., a supplier who provides products or services to a hotel). A system with a conceptual modelling perspective represents the possible solutions for an underlying problem domain. There are no inherent implications that systems have to be computerised (refer to section 4.7 for discussions). In the domain of hotel customer complaint management, a customer complaint management system does not necessarily need to be a computer supported system. However, information technology provides efficient and consistent support for handling customer complaints.

In this research, the activities such as handling customer complaints, analysing customer complaints, and exploiting customer complaints are pertinent to the effective knowledge management applications in hotel customer complaint management. Those activities are modelled into use cases. The research adopts the UML notation of << Uses >>, stereotype to model relationships among different use cases. The application of the notion of stereotype has provided the capability of extending basic modelling elements to create new elements. It can also enhance the level of abstraction and reduce the details needed for a model by reusing the existing elements of other use cases.

Figure 4 on page 135 illustrates the base use case *Manage* which uses the functionalities of the uses cases *Handle, Analyse* and *Exploit* to achieve its goals. Each

of the sub use cases has their own sub use cases. This operational perspective of the domain model represents the high level activities that promoting the effective knowledge management application in hotel customer complaints management. The activities are identified and evolved through an iterative and incremental coding, analysis and interpretation of the interviews data and informed by the secondary literature.

The domain model *Manage* (i.e., the operational perspective of the knowledge-enabled hotel customer complaint management model) use case is concerned with leveraging customer complaint data and information into actionable knowledge to support the effective management of customer complaints. Refer to Figure 4, the research has classified the use case *Manage* as the base use case (the top level use case of the domain, often referred to as the domain model in object-oriented modelling) to describe the operational perspective of the knowledge-enabled hotel customer complaint management model.
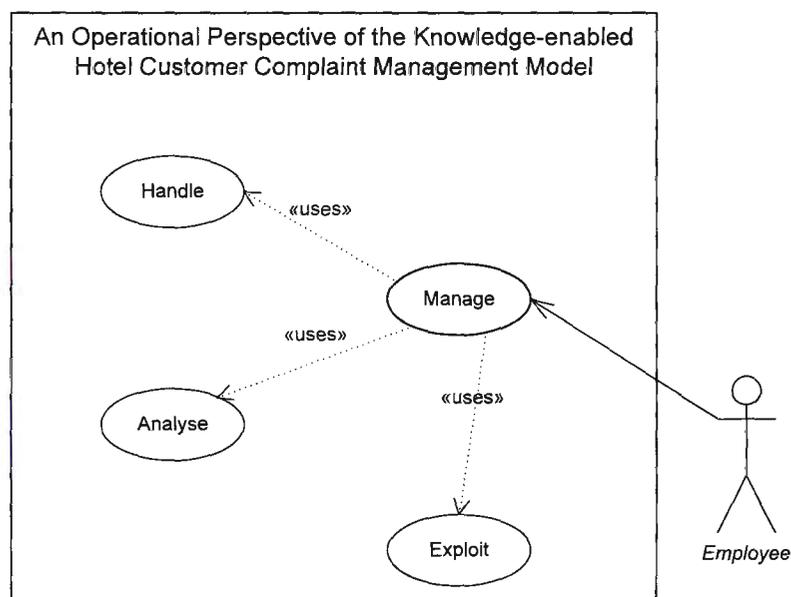
Figure 4: An operational perspective of the knowledge-enabled model

The base use case *Manage* consists of three sub use cases:

i)   *Handle,* which is a use case concerned with the establishment of a hotel complaint management mechanism to support the customer complaint handling process;

ii)   *Analyse,* which is a use case that involves the analysis of the complaint management related data and information to support the development of business rules for hotel customer complaint handling and quality improvement of the services for the hotel; and

iii)   *Exploit,* which is a use case about the utilisation of hotel customer complaint knowledge to take action in improving the service quality in the management of hotel customer complaints.

Each of the three sub use cases utilises their own sub use cases to achieve correspondent sub goals and functionalities. The base use case *Manage* utilises the functionality of the sub use cases of *Handle, Analyse,* and *Exploit* to achieve its goal.

Table 7 gives a summary of the description of the *Manage* use case, which documents the brief description of the use case, the scope of the use case, the actors involved in the use case, the main interests and the flow of activities of the *Manage* use case.

Name of the use case	*Manage*
Description	This use case is the top level use case, which is often referred

	to as a domain use case. It describes the main elements of activities and interests in the domain of knowledge management application in hotel customer complaint management.
Scope	Domain level, the base use case
Actors	Employees
Main interests	-Global goals include to provide support to customer complaint management to hotel organisations by: i) Enabling knowledge management applications; ii) Enhancing customer satisfaction; iii) Promoting efficient and consistent support to customer complaint handling; iv) Supporting service quality improvement; and v) Managing customer complaint management knowledge in terms of knowledge generation, knowledge dissemination, and knowledge utilisation.
Activities	- Sub use cases include: i) *Handle* customer complaints; ii) *Analyse* customer complaints; and iii) *Exploit* customer complaints.

Table 7: Description of the base use case *Manage*

6.2.1. Handling Customer Complaints

Effective customer complaint handling is one of the primary goals of customer complaint management in hotels. To be able to support the handling of customer complaints effectively, a hotel needs to have adequate policies, procedures and systems in place that enable the employees of a hotel to perform service recovery tasks. The ability to establish and conduct such policies, procedures, and systems will enable employees to perform their tasks effectively. The customer complaint handling process provides a platform for the generation, dissemination and utilisation of the complaint management knowledge between the hotel employees and customers as well as related external service providers.
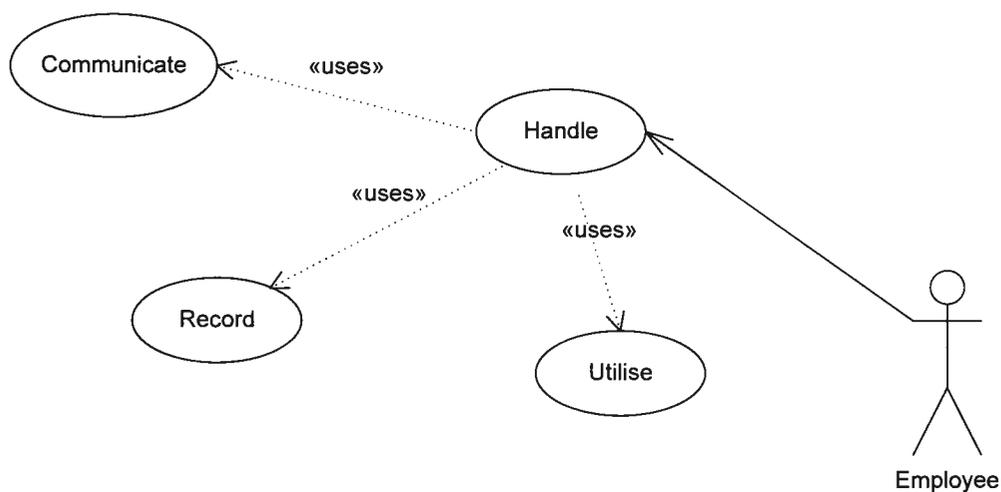
Figure 5: Sub use case *Handle*

Figure 5 illustrates the three activities that influence the effectiveness of customer complaint handling that have been modelled as sub use cases: *Communicate, Record, and Utilise.*

i)   The sub use case *Communication* concerns the dialogue mechanisms between the dissatisfied customers, the hotel employee, and the service

providers in terms of communication channels and how that may affect the effectiveness of customer complaint resolutions;

ii)   The sub use case *Record* concerns the roles of customer complaint management data in a proposed knowledge-enabled approach; and

iii)   The sub use case *Utilise* concerns the application of customer complaint management knowledge, for example, compensation policies, business rules, and tactics.

Table 8 gives a summary of the *Handle* use case, which documents the brief description of the use case, the scope of the use case, the actors involved in the use case, the main interests and the flow of activities.

Name of the use case	*Handle*
Description	Depicting the main elements of customer complaint handling
Scope	Sub use case of *Manage*
Actors	Employees
Main interests or flow of activities	-Global goals include: i) Providing an effective customer complaint handling mechanism; ii) Providing consistent support to employees in customer complaint management related matters; and iii) Recording complaint management related data.

	- Sub use cases include:
	i) *Communicate* customer complaints;
	ii) *Record* customer complaints; and
	iii) *Utilise* customer complaints.

Table 8: Description of the sub use case *Handle*

6.2.2. Analysing Customer Complaints

The knowledge-enabled model promotes the importance of analysing customer complaint related data. The data accumulated during the customer complaint handling process needs to be systematically analysed using both quantitative and qualitative methods. Two sub use cases have been identified to accommodate this need: *Discover* and *Identify*.

i)   The sub use case *Discover* concerns the mechanism of discovering patterns, trends, and solutions of customer complaints management; and

ii)   The sub use case *Identify* seeks the root causes of the customer complaints in order to provide quality improvements.
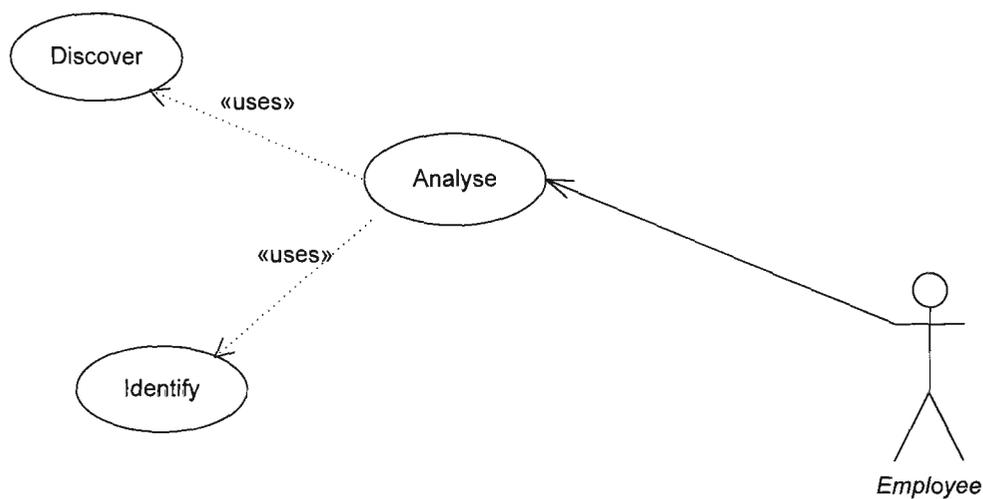
Figure 6: Sub use case *Analyse*

The *Discover* use case focuses upon the application of quantitative analyses. The result of quantitative complaint analysis can be used as a good indication for weaknesses and opportunities facing businesses. It concerns the relationship between volumes and characteristics. Common methods such as frequency distribution, cross tabulations analysis and frequency-relevance analysis can be used in this regard. The purpose of frequency distribution analysis is to determine the number of complaints within specific criteria. Cross tabulations analysis can be used when useful relationships between criteria can be assumed. Frequency – relevance analysis is based on the assumption that problems occur frequently. The analysis tools can be built into a complaint management system or use plug in technology such as spreadsheets or data mining techniques.

The *Identify* use case emphasises the application of qualitative analysis. Qualitative complaint analysis is concerned with investigating problems in relation to their root causes. In examining the root causes, a cause and effect diagram analysis can be used.

The analysis method involves a process in which all the possible influential variables are determined for each clearly defined problem. The goal of this approach is to identify the causes that are responsible for the occurrence of the problem, by tracing the chain of events back to its origin. By analysing the roots of the customer complaints, the hotel will better understand the weakness of its operations.

Table 9 gives a summary of the description of the *Analyse* use case, which documents the brief description of the use case, the scope of the use case, the actors involved in the use case, the main interests and the flow of activities.

Name of the use case	*Analyse*
Description	This use case depicts customer complaint data analysis
Scope	Sub use case of *Manage*
Actors	Employees
Main interests or flow of activities	-global goals include: i) Identifying customer complaint patterns, trends, and solutions; ii) Identifying root causes of customer complaints; and iii) Proving solutions for consistent support for customer complaint handling; - sub use cases include: i) *Discover* (Discovering customer complaint pattern and solution); and

	ii)	*Identifying* (Identifying root causes of customer complaints) ;

Table 9: Description of the sub use case *Analyse*

6.2.3. Exploiting Customer Complaints

Three sub use cases have been identified as *Share, Create, and Acquire* for the use case of *Exploit*.

i) The sub use case *Share* shows how the existing customer complaint management knowledge can be shared between employees in hotels;

ii) The sub use case *Create* indicates how the new customer complaint management knowledge can be created internally by a concerned hotel; and

iii) The sub use case *Acquire* illustrates how the new customer complaint management knowledge can be acquired externally by a concerned hotel.
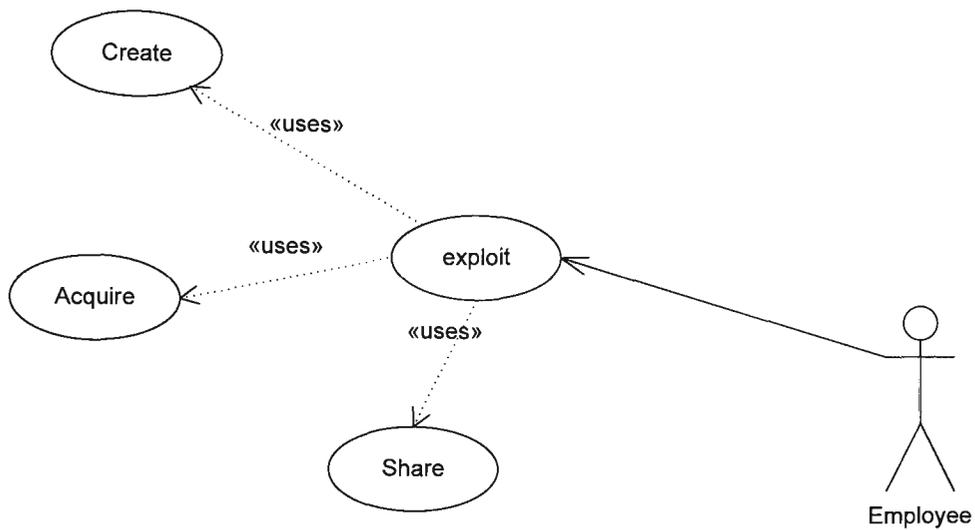
Figure 7: Sub use case *Exploit*

Those activities are application strategies for managing hotel customer complaint management knowledge. The data and information identified through the process of customer complaint management is the source of the complaint management knowledge.

Name of the use case	*Exploit*
Description	This use case depicts the strategies for managing hotel customer complaint management
Scope	Sub use case of *Manage*
Actors	Employees
Main interests or flow of activities	-global goals include: i) Supporting the management of hotel customer complaints ii) Sharing, creating, and acquiring customer complaint management knowledge to improve the

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	capacity of innovation;
	iii) Improving the quality of services;
	- sub use cases include:
	i) *Share* (sharing customer complaint management knowledge between employees);
	ii) *Create* (creating new knowledge within a hotel); and
	iii) *Acquire* (acquiring external knowledge)

Table 10: Description of the sub use case *Exploit*

Table 10 gives a summary of the *Exploit* use case. It provides a brief description of the use case, the scope of the use case, the actors involved in the use case, the main interests and the flow of activities.

The knowledge-enabled hotel customer complaint management model promotes the application of knowledge management activities to support the effective management of customer complaints. The power of this approach relies on a hotel's ability to identify, share, and use customer complaint management knowledge. The next section will discuss the knowledge-enabled model at a conceptual perspective.

6.3. Conceptual Perspective

This section explains how the knowledge-enabled approach can support the management of hotel customer complaints by incorporating the application of the knowledge concept. The conceptual perspective of the knowledge-enabled model adopts the class diagram facilities provided by the UML.

The class diagram notation has been adopted to illustrate the concepts, objects, relationships and vocabularies in the domain. The class diagrams in the object-oriented approach provide facilities to identify actors and objects involved in a system domain, and model the relationships among the actors and objects. A class is represented as compartmentalised rectangles in the UML notation. In the domain of a knowledge-enabled approach in hotel customer complaint management, customer, employee, complaint, type of complaint, business rule, and communication channel are the main classes. These were identified through the interviews with domain experts in the hotel industry and hospitality management academics.

The object-oriented theory views that the interactions between classes can change the status of the property of the classes, which in turn changes the status of a problem situation. This facility can be used to model the intervention of employees of a hotel when handling a customer complaint.

The knowledge-enabled approach in customer complaint management promotes the application of the domain knowledge. The hotel customer complaint management knowledge is generated and applied through the management process of the customer

complaints. In this domain, the various parties (such as the dissatisfied customers, employees, and suppliers) communicate each other through different channels. With reference to Figure 8, the notations of multiplicity (e.g., 1 or 0..*, or *) are used to indicate how objects may fill the property (e.g., an employee may handle none or many complaints).

In UML, the multiplicity between objects/classes is commonly defined as having a lower bound and an upper bound; between classes including the class itself can have association (e.g., the employee class and the complaint class), aggregation (is *the part-of relationship*, e.g., A is part of B). Refer to Figure 8: A conceptual perspective of the knowledge-enabled model, the business rule class is part of the hotel customer complaint management class. Refer to Figure 10: Employees on page 152, the relationship between the employee detail class and the employee class has been modelled as composition. A composition is a strong type of aggregation with exclusive ownership of particular other components.
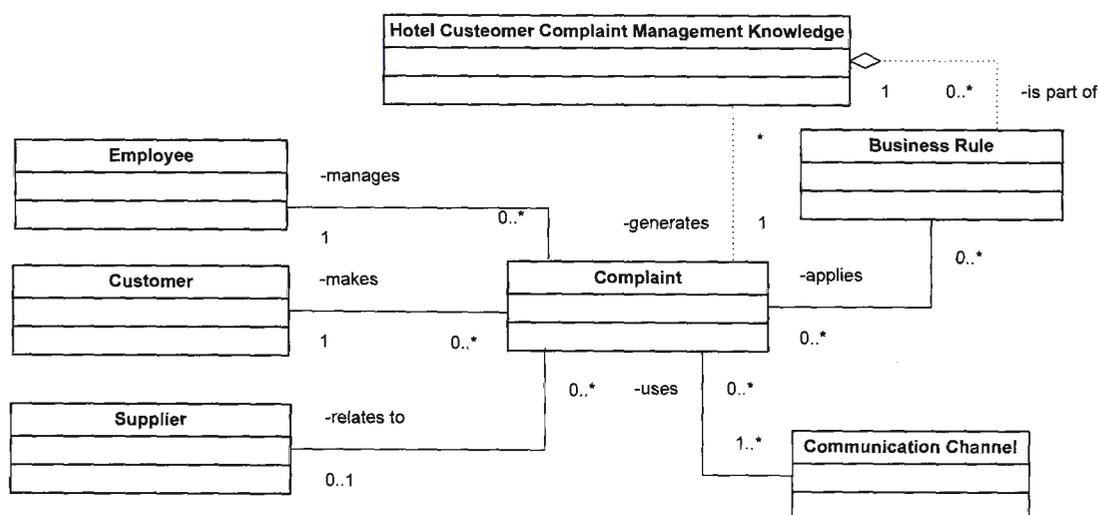
Figure 8: A conceptual perspective of the knowledge-enabled model

The multiplication between the complaint class and the hotel customer complaint management knowledge class (1 : *) denotes that the management of every customer complaint case can generate many forms of knowledge relating to the management of a customer complaint (refer to Figure 8). The use of a dotted line rather than a solid line between the complaint class and the business rule class to the hotel customer complaint management knowledge class denotes that unless knowledge management activities are being pursued (refer to the previous the operational perspective of the model), the concerned hotel might not be able to generate and use the hotel customer complaint management knowledge. The aggregation relationship (i.e., a *part of relationship*) between the business rule class and the hotel customer complaint management knowledge class (0..* : 1) denotes that a business rule in complaint management is a artefact, which is part of the hotel customer complaint management knowledge.

An effective business rule for customer complaint management should be based on the application of the hotel customer complaint management knowledge. The multiplicity between the employee class and the complaint class (1 : 0..*) denotes that at a given time an employee might or might not be involved in many customer complaint cases. The multiplicity between the customer class and the complaint class (1: 0..*) denotes that at a given time a customer might or might not be involved in many complaints. The multiplicity between the supplier class and the complaint class (0..* : 0..*) denotes that suppliers are involved in the management process of customer complaints when complaints are related to the suppliers who provide services to hotels (it is possible that none of suppliers are involved). The multiplicity between the complaint class and the communication channel (0..*: 1..*) denotes that a customer might choose one or more channels to communicate with hotels.

The effective knowledge management approach to customer complaint management in a hotel relies on the development of business rules for the management of customer complaints. The business rule class is a broad description of how the management of customer complaints can be effectively carried out in a hotel. In practice, the business rules are often defined by the means of customer complaint handling policies and procedures in hotels. The better a hotel's ability to acquire, analyse, and use its customer complaint data, information, and knowledge, the better the hotel in a position of developing their own business rules to support the management of customer complaints.

Figure 8 illustrates that hotel customer complaint management can generate knowledge to support the development of business rules. In turn, the application of the business rules can support the management of customer complaints by providing effective decision making support. The effectiveness of customer complaint management for a hotel might be affected by the ability of the hotel in managing the hotel customer complaint management knowledge.

The effective management of communication is the key for the knowledge-enabled customer complaint management approach. Various communication channels provide the platform for customer complaint management knowledge identification, sharing and use.

Figure 9: Communication channels on page 150 illustrates that in practice, there are two types of communication media used in hotel customer complaint management:

i)   the synchronism - a type of communication that a sender and a receiver communicating simultaneously - such as face to face, and by telephone; and

ii)   the asynchronism a type of communication that a sender and the receiver

communicating with a delayed response) such as using email, web

feedback forms, fax, letter, and comment card.

There are other communication methods, but are the variations of the two forms of

mediums (i.e., the synchronism and the asynchronism).

A hotel relies on the effective management of various communication channels to

support the management of customer complaints. These include communication

between customers to employees; between employees; and between the hotel and the

external service providers.
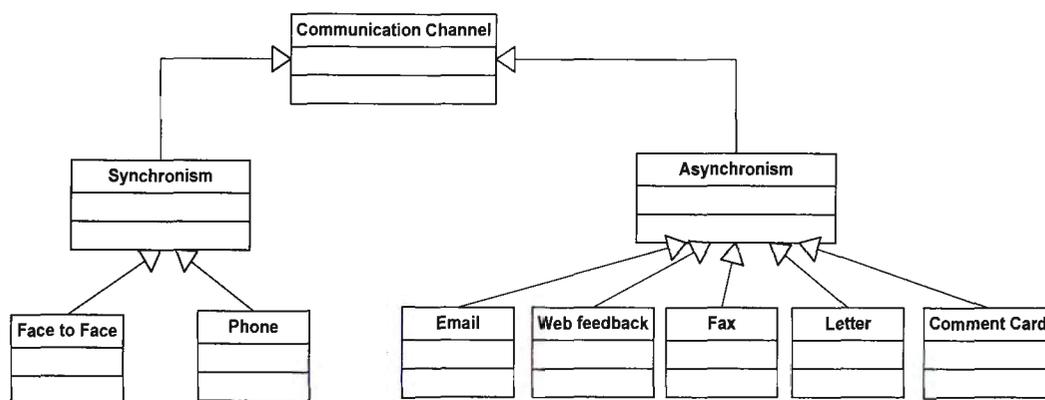
Figure 9: Communication channels

Employees are the primary source of the employee customer complaint management

knowledge. The hotel employee knowledge is important to both the production-line

approach and the empowerment approach practised in the hotel industry (refer to

section 3.5 for details). Hotels commonly organise their employees into operational

units: such as room service, human resources, food & beverage, front desk,

maintenance, accounting, and sales & marketing. It is exceptional, rather than common,

for a hotel to have a complaint handling department.

The manager class is a specialisation of the employee class with added responsibilities. Figure 10: Employees on page 152 illustrates that a new type of employee in hotel is a specialisation of the employee class. This classification allows hotels to alter an employee's responsibility with minimal impact to the organisational structure. The relationship between the employee detail class and the employee class is a composition relationship (a strong type of aggregation relationship), it denotes that

i)   an employee will have various details associated with the employee (such as name, salary rate, home address, alternative contact phone number expertise etc.,) and

ii)   a particular detail is associated with the employee only (refer to Figure 10: Employees on page 152).

The group employees' knowledge in the domain of customer complaint management, for example the knowledge in the house keeping department, is one kind of collective ability in managing hotel customer complaints and is the one of the bases for forming organisational hotel customer complaint management knowledge.
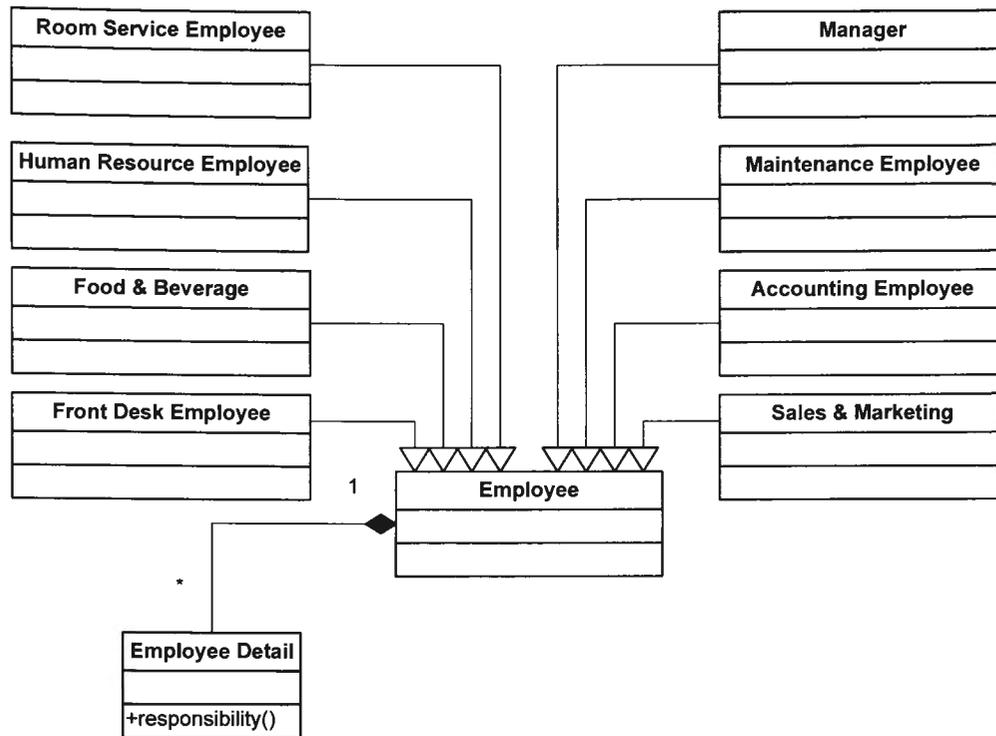
Figure 10: Employees

A dissatisfied customer class is a generalisation of the representation of various types of dissatisfied customers (refer to Figure 11: Dissatisfied customers on page 153). In the domain of customer complaint management, dissatisfied customers can be broadly classified into two main categorises: internal and external dissatisfied customers.

The dissatisfied internal customer class and the dissatisfied external customer class are the subclasses of the dissatisfied customer class. An employee of a hotel can potentially be a dissatisfied internal customer. Thus, the dissatisfied internal customer class has been modelled as part of the employee class (an aggregation relationship). A dissatisfied external customer can be a dissatisfied buyer, a dissatisfied payer or a dissatisfied user. Therefore, the dissatisfied customer complaint management knowledge can further include payer knowledge, buyer knowledge, and user

knowledge. These three subsets of knowledge have been modelled as specialisations of the dissatisfied external customer knowledge.

The effective management of hotel customer complaints might also rely on the hotel's ability to share certain aspects of the hotel customer complaint management knowledge to facilitate the resolution of customer complaints and to enhance the level of satisfaction on the customer complaint handling process.
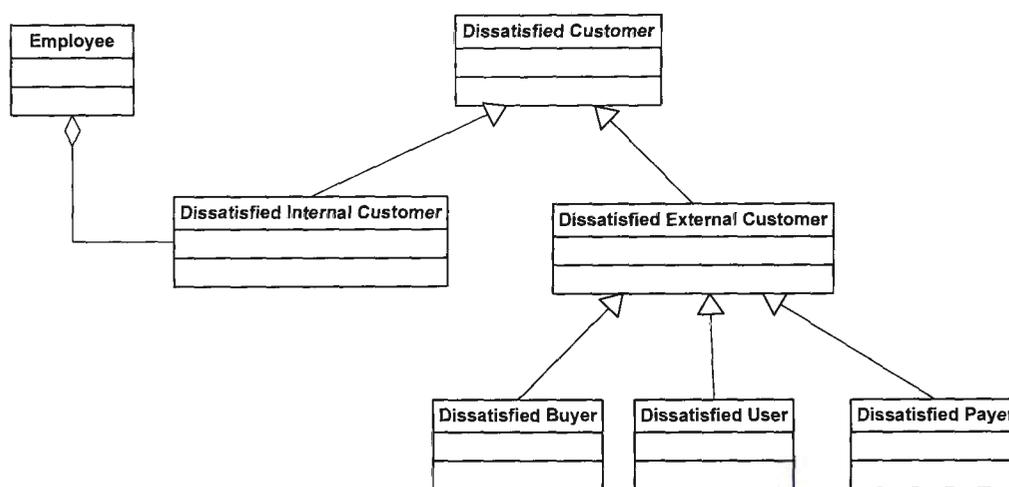
Figure 11: Dissatisfied customers

The type of customer complaints that a hotel receives is influenced by many factors. A knowledge-enabled hotel customer complaint management approach supports the ability of a hotel to identify the common types of customer complaints. It is the first step for designing customer complaint management systems and for the support of business operation.

Five common types of hotel customer complaints - facility related complaint; employee related complaint; payment related complaint; marketing related complaint; and service related complaint have been identified during the interviews (refer to Figure 12: Types

of complaint on page 154). A new type of complaint class is a specialisation of the type of the complaint class. This classification accommodates the needs for hotels that adopt a functionally oriented organisational structure.

In this structure, employees are encouraged to manage the customer complaints as and when they arise. The relationships between the complaint class and the type of complaint class denote that

i)   customer complaints can be classified into types of complaints; and

ii)   it is possible that a type of complaint has no instances.

The relationship between the type of complaint and business rule denotes that a given type of customer complaint can apply one or many business rules. It implies in practice that the business rules of customer complaint handling are to provide decision support only; while the employees might have certain discretion in terms of how disagreements are interpreted in certain situations.
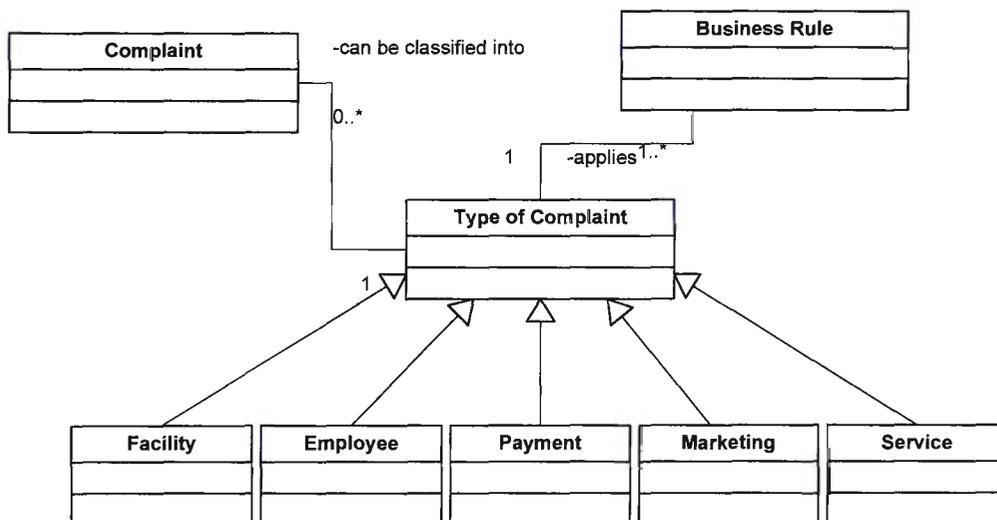
Figure 12: Types of complaint

With reference to Figure 12, the multiplicity between the complaint class and type of complaint class (0...* : 1) denotes that a type of complaint can have non or many

complaints. So in practice, the model promotes consistency support in terms of the management of customer complaints. The multiplicity between the business rule class and the type of complaint class (1...*:1) denotes that a particular type of complaint will be related to one or many business rules for which the process of customer complaint handling might need to apply. The rationale behind this is that the model provides various decisions support options to the users.

6.4. Chapter Summary and Conclusions

The chapter has adopted the object-oriented theory to represent a knowledge-enabled hotel customer complaint management model. The model has been illustrated and discussed in both the operational perspective and the conceptual perspective. Within the operational perspective of the domain model, the knowledge-enabled approach in hotel customer complaint management has been modelled through the use of use cases to discuss the goals and interests of hotel customer complaint management. The major sub use cases identified include: *Handle*, *Analyse*, and *Exploit*. Within the conceptual perspective, major objects and relationships involved in the management of hotel customer complaints have been discussed.

A knowledge-enabled approach to hotel customer complaint management promotes the use of structured knowledge, but also holds the view that employees and dissatisfied customers are the ultimate sources of the hotel customer complaint management knowledge. The effective management of hotel customer complaints relies not only upon effectively handling the customer complaints, but also the ability and capacity to analyse the complaint management data and information, and to exploit the customer

complaint management knowledge, that is drawn from the data and information in the course of complaint management.

The next chapter will evaluate the research process and outcomes of this project.

CHAPTER 7: EVALUATING THE RESEARCH PROCESS AND OUTCOMES

7.1. Introduction

This thesis has described an exploratory and interpretative-qualitative study on knowledge management applications in customer complaint management in hotel settings. The primary aim of this study is to develop an improved understanding on how the hotel customer complaint management knowledge and its applications can lead to the advancement of pragmatic support for the management of hotel customer complaints. This chapter evaluates the research in terms of the research process and outcomes.

7.2. The Research Process

7.2.1. A Self Reflection on Interpretative Principles

This study has primarily adopted an interpretative epistemological viewpoint. It is agreed that the hotel customer complaint management knowledge gained through individual interpretation of the knowledge is strongly influenced by social constructions and by the collective perceptions of individuals.

In accordance with this epistemological viewpoint, the interview method has been selected as the primary method of data collection. The findings of the interviews supported the formation of the hotel customer complaint management knowledge concept and the development of the knowledge-enabled hotel customer complaint

management model. Ontologically, the approach taken in the study is subjectivist, working from the assumption that reality is personally interpreted and socially constructed. In the development of conceptual reality, it is important to acknowledge the value of aligning the ontological concerns of being, with epistemological concerns of knowing should not be ignored; as it is related to not only data, information and knowledge of the domain, but also interaction among the parties who might potentially use the conceptual model. Based on this view, the interview method is a suitable method for knowledge acquisition in this knowledge management application. The interviewees are potential users of the concept and the model in this context.

Since this study is interpretative and qualitative, it is important to be clear about the researcher's viewpoint on which the data are collected, analysed, examined, and interpreted. In the positivist paradigm, objectivism views researchers as objective agents in scientific enquiry. Interpretative qualitative researchers recognise that the personal factors of a researcher do influence data collection and analysis. For instance, Glaser & Strauss (1967) have argued that a researcher's personal experience plays a role in interpretive research enhancing and sensitising data collection and analysis, theory formulation, and even research credibility. In this sense, qualitative interpretivism researchers should reflect on how such factors would influence the research process and outcome, and strive to check such influences where possible.

In the process of data collection and analysis, this study covered a continuum beginning with the definition of the research question and the research design, and moving to a process with assembly of the interview data as well as looking for categories and patterns by which the formulation of the knowledge concept and the knowledge-enabled model were supported.

It is not the intention of the researcher to pretend to be independent, or objective, but rather to undertake a rigorous analysis and interpretation of the data gathered through the reality that has been constructed by the interviewees. While the researcher's experience and knowledge might influence the analysis and interpretation of the data to some extent, objectivity exists in this study as an appropriate qualitative interview method was employed that maintained an adequate distance between the interviewer and the interviewees. Any action taken in the research process was also preceded by evaluation on the part of the researcher. A continuous effort was made to filter out the influence of personal factors, from the choice of paradigms to the selection of the appropriate methodology and methods of data collection, analysis, and interpretation. A concrete effort has been made by the researcher to enhance the validity and reliability of the research, upon which most of the positivist research criticises to qualitative and interpretative research.

This study uses a set of principles from existing methodology literature for evaluating interpretative research (Klein & Myers 1999) to evaluate and reflect this research progress in terms of:

a) hermeneutic circles (interrelated parts that make up a whole and consideration of a whole);

b) contextualisation (a research is in a social and historical context);

c) interaction (the interaction between the researcher and the participants);

d) abstraction and generalisation (the particular details derived from a study is related to more general theoretical concepts in order to provide the theoretical insight);

e)   dialogical reasoning (contradictions between the original theoretical underpinnings of the research and the actual findings);

f)   multiple interpretations (incorporating different viewpoints off the participants); and

g)   suspicion (critical perspective about the data and only at face value).

The hermeneutic principle suggests that human knowledge enquiry and understanding can only be achieved through the iteration between a consideration of the interrelated parts that make up a whole and consideration of a whole. This principle encourages a researcher to view and interpret the data iteratively to enhance the understanding of the domain. In this research, the SQL-Database approach was used to assist the researcher to compare the interview data iteratively. The concepts, objects, relationships, and the model are the results of the iterative and comparative interpretation of the data that has been collected. The underlying principle of the object-oriented theory promoted the iteration and incremental development methods. The formation of the knowledge concept and the knowledge-enabled model was supported by continuous interaction between the researcher and the domain experts.

The principle of contextualisation considers a research project in its social and historical context, so the intended audience can see how the current situation under investigation has emerged. As discussed in the previous methodology chapter, (refer to section 4.5), the researcher has purposefully communicated the research objectives and preliminary research findings prior to interview. On this basis, the interviews and discussions were always within the predefined themes.

The principle of interaction between the researcher and the participants involves the recognition of not only the researcher's own influence on the interpretations on the data, but also the participants' role in interpreting the data. The researcher adopted this principle by discussing the knowledge concept and the knowledge-enabled model with many of the interviewees. One of the objectives of the category two interviews was to discuss the aspects of the study that are familiar with an interviewee and to receive feedback from the interviewee on the concept and the model. The feedback gathered has helped to refine the concept and the model.

The principle of abstraction and generalisation concerns that way in which explanations regarding the particular details derived from a study is related to more general theoretical concepts in order to provide the theoretical insight. Although the principles of abstraction and generalisation are generally not the primary aims for an interpretative study, there are expectations that the insights reported in an interpretative research can be used to inform other settings. In this study, the conceptualisation of the hotel customer complaint management knowledge concept and the development of the knowledge-enabled model are examples that interpretative research approach is possible to provide abstract and generalised findings within a domain.

The principle of dialogical reasoning requires that a researcher demonstrates sensitivity to possible contradictions between the original theoretical underpinnings of the research and the actual findings. In this research, the knowledge management theory and the object-oriented theory informed the formation of the hotel customer complaint management concept and the knowledge-enabled hotel customer complaint management model. During the process of the concept formation and the model

development phase, the secondary data from the literature and the data gathered from the interviews was iteratively analysed and interpreted.

The principle of multiple interpretations requires a researcher to seek out and document possible multiple view-points in order to examine conflicting interpretations of the participants. In this research, multi view-points from the interviewees have been analysed by the use of the SQL facility to assist the researcher to compare the view-points of individual interviewees from multiple dimensions.

The principle of suspicion requires that a researcher takes a critical perspective about the data gathered from the respondents, rather than just accepting the respondents' comments at face value. The researcher has been aware that although the data gathered from the interviews are the primary source of evidence used to maintain the concept formation and the model development process, the quality of the data could be affected by various factors such as an interviewee's experience and motivation and even the physical environment of the premises where the interview is being conducted. The semi-structured interview has allowed the researcher to ask follow up questions to clarify any doubts raised during the conversation between the researcher and an interviewee. At the analysis phase, any suspicious data was re-evaluated by comparing the data with other relevant interview data and the literature.

7.2.2. Validity and Reliability of the Research

Validity and reliability are two important criteria for the measurement of the quality of a piece of research: for both positivist and interpretivist researchers. Validity and reliability are the key tests in positivist research, because positivists aim to make their

research findings readily generalisable from their samples to the population. For positivists, validity is concerned with the extent to which the material being studied is what the researcher claims it to be. It raises the issue of whether or not the data collected precisely measure the phenomenon that the researcher is studying. Reliability is the robustness of the process, the design, and the tools of research (Neuman 2003). This approach ensures that the same research can be repeated by other researchers with a different sample, and essentially the same results can be obtained. The tests of validity and reliability are concerned with more accurate measuring and learning social reality as grounded on the underlying assumption of positivist research.

Validity and reliability in qualitative interpretivist research relate to the ability of the research to be repeated, and to its success, or otherwise, in answering the research question. Hussey & Hussey (1997) have argued that having addressed these issues, the quality, validity and reliability of a qualitative research has been achieved. Using Yin's (2003) four assessments of construct validity, internal validity, external validity and reliability addresses the issues of the standard of the research.

Construct validity refers to the degree to which inferences can legitimately be made from the operationalisations in one's study to the theoretical constructs on which those operationalisations were based. It is a judgement based on the accumulation of correlations. In this study, a variety of techniques have been employed to ensure construct validity of the data and the data analysis. The study maintained construct validity through on-going dialogue between the researcher and the numerous interviewees, participants of conferences and seminars, and paper reviewers from various academic journal and conferences. In addition to the conduct of 47 interviews with the domain experts, the researcher has given over twenty presentations and

discussions in various conferences, academic seminars, and PhD workshops, and published thirty peer reviewed articles concerning research methods, modelling, and knowledge management theory and practice. The use of feedback from the presentations and discussions has enabled the emerging findings of this research project to be incorporated into the concept formation of the hotel customer complaint management knowledge and the knowledge-enabled hotel customer complaint management model.

The interview data and the interpretations on the data were constantly scrutinised by the researcher, by other academics and by peer reviewers. The preliminary findings of the study were discussed in subsequent interviews with participants in different organisational settings within both industry and academia. To further improve the construct validity, as suggested by Yin (1994), this study has also utilised the secondary data collection method to inform the findings wherever appropriate, for instance, the application of knowledge management and object-oriented theories.

Internal validity considers the approximate truth in terms of inferences regarding causal relationships or effects. It is not relevant in most observational or descriptive studies. It is not the focus of an exploratory study such as this one. External validity is related to generalising. It is the degree to which the conclusions in one's study would hold for other persons in other places and at other times. Yin (1994) has suggested that external validity could be achieved from theoretical relationships, and from these generalisations could be made. It is measured by the degree of transferability of the research. Similarly, Lincoln and Guba (1985) have posited that the burden of proof of transferability lies both with the original investigators as well as with the person seeking to generalise the findings of the research. Transferability for this study was

established through taking care of the interview question design, interviewee selection, and the design and implementation of the interviews.

Reliability is referred to the consistency or repeatability of the measures of a research. It is dependent upon stability, consistency and predicability (Lincoln & Guba 1985). The reliability is often a part of a larger set of factors that are naturally associated with change, and a researcher seeks a means for taking into account both factors of instability and factors of phenomenal or design induced change. In interpretative, research dependability is often accomplished using a diary technique to record the process of a particular study. In this research, the researcher has used a purpose designed and built database for the purpose of not only supporting the comparison and interpretation of data, but also administrative tasks such as recording personal notes that allowing for reflection upon what happens in relationship to the personal values or perceptions of the interviewees, and the thoughts of the researcher. The research project also maintained a reference library using the Endnote X (a reference management software) in supporting the referencing and analysing the secondary data.

Sampling Method

The selection of a valid sampling method is important for the quality, validity, and reliability of the research. Sampling considerations for qualitative interpretivist research are different from those of quantitative positivist research. Quantitative positivist researchers are concerned with the representativeness of the sample due to their attempt to make claims about generalisability. They generally employ probability sampling procedures. Qualitative interpretivist researchers are concerned with a fine grained understanding of phenomena in specific contexts (Rubin & Rubin 1995) and do

not attempt to make claims about generalisability of their findings, leaving it to readers of their findings to make inferences about generalisability.

In many cases qualitative interpretivist researchers take a relatively small, selective sample (e.g., Patton 1990; Neuman 2003) and employ more flexibility in sampling than is the case for quantitative positivist researchers. Such flexibility may, at times, lead to choosing inappropriate sampling procedures which may adversely affect the robustness of research results. Morse (1991) has argued that random sampling should be avoided because a small random sample violates both the quantitative principle that requires an adequate sample size to ensure representativeness and the qualitative principle of appropriateness. All sampling in qualitative research has a purpose and can be encompassed under the umbrella term of purposeful sampling (see Patton 1990; Sandelowski 1995).

As sampling is the essential building block of this qualitative interpretative study, it is important to clarify the principle of purposeful sampling method that is chosen for the study. There are different types of qualitative sampling found in the current qualitative methodology literature. Four types of qualitative sampling are put forward by Morse (1991): the purposeful sample, the nominated sample, the volunteer sample and the sample that consists of the total population. Patton (1990) has asserted that all sampling in qualitative research is purposeful. Sandelowski et al. (1992) have proposed two types of qualitative sampling, purposeful (selective) sampling and theoretical sampling.

Purposeful sampling was first proposed by Schatzman and Strauss (1973). They suggested that field researchers, after several visits to the research site, will come to know who, what, when, and where to sample. Categories such as age, gender, status,

role or function in an organisation may also serve as criteria in selecting samples. According to their view, the key for selective sampling is that subjects are selected according to the aims of research. Similarly, Patton (1990, pp 169) has asserted that *"qualitative inquiry focuses in depth on small samples, even single cases, selected purposefully... the logic and power of purposeful sampling lies in selecting information rich cases for study in depth. Information rich cases are those from which one can learn a great deal about issues of central importance to the purpose of the research..."* In this sense, purposeful sampling and selective sampling share essentially the same meaning in that subjects are sampled on a selective basis as well as with the particular purpose of the underlying of the research.

The gaol of theoretical sampling is to facilitate the development of analytic frame and concepts in a research. As described by Glaser (1978, pp 36) is that *"the process of data collection for generating theory whereby the analyst jointly collects, codes, and analyses his data and decides which data to collect next and where to find them, in order to develop his theory as it emerges. This process of data collection is controlled by the emerging theory, whether substantive or formal."* The general process of theoretical sampling, according to Glaser (1992, pp 102) is *"to elicit codes from the raw data from the start of data collection through constant comparative analysis as the data pour in. Then one uses the codes to direct further data collection, from which the codes are further developed theoretically with properties and theoretically coded connections with other categories until each category is saturated."* Theoretical sampling is developed through continual comparative analysis of data collected from beginning to next stage of data collection.

What then is the difference between theoretical sampling and purposeful sampling? According to Glaser (1978), researchers who use purposeful sampling, decide in advance what to sample according to a preconceived but reasonable initial set of dimensions while those who use theoretical sampling cannot know in advance precisely what to sample and where the sampling will lead them. The distinction between theoretical sampling and purposeful sampling lies in that in the former the researcher selects the subjects to sample according to the purpose of the research before data collection actually begins, while in the latter sample selection, data collection and data analysis are carried out jointly in an ongoing, emergent process of theory development.

In contrast to Glaser's point of view, some researchers see purposeful sampling and theoretical sampling as being synonymous. For example, Morse (1991, pp 129) has stated that *"when obtaining a purposeful (or theoretical) sample, the researcher selects a participant according to the needs of the study."* With no specification on theoretical sampling Patton (1990) has argued that *"in the early part of qualitative fieldwork the evaluator is exploring, gathering data and beginning to allow patterns to emerge. Over time the exploratory process gives way to confirmatory fieldwork...and sampling confirming as well as disconfirming cases.* In this context, theoretical sampling is represented as confirming and disconfirming cases. Sandelowski et al. (1992) have suggested that the distinction between purposeful and theoretical sampling lies in the time in the research process at which sampling decisions are made. They explain that theoretical sampling is typically preceded by purposeful sampling because of the way academia operates where any research project needs a clear specification of a sampling frame - that is the kinds of objects to be studied at the very beginning - so as to receive approval from ethics committees or funding agencies.

In this study, sampling was purposeful as sampling decisions were made prior to the study, in order to conform to Victoria University's Ethics requirements. The insights and feedback gathered from the interviewees were a valuable source to support the formation of the hotel customer complaint management concept and the development of the knowledge-enabled model.

Sample Size

For a quantitative positivist researcher, sample size refers to the number of subjects. In qualitative interpretivist research, on the contrary sample size refers not only to the number of subjects, but also the number of events samples and the number of interviews and observations carried out. This is because in qualitative interpretivist research the subject of study is the experiences, events, incidents, and etc. (Sandelowski 1995). As suggested by Sandelowski (1995, pp 183) *"Determining an adequate sample size in qualitative research is ultimately a matter of judgment and experience in evaluating the quality of the information collected against the uses to which it will be put, the particular research method and sampling strategy employed, and the research product intended."* Thus, the evaluation on sample size was considered in this study, as there are a number of factors that influence sample size.

The appropriate sample size in qualitative research depends on the type of sampling that is used. To elaborate the different requirements on sample size by the different purposeful sampling types, Sandelowski (1995) has used deviant case and maximum variation sampling as examples. In deviant case sampling, where the aim is to investigate an atypical manifestation of a phenomenon, one case can be sufficient. Even within one case there is however, a need for within-case sampling (see Miles &

Huberman 1994). A researcher has to decide which of wealth of data provided by the case should be sampled in order to explicate its typicality. Maximum variation sampling typically requires the largest minimum sample size among all the purposeful sampling where the researcher must decide what kinds of variation to maximise and when to maximise each kind.

Demographic variation is one kind in which variation is sought along demographic dimensions. According to Sandelowski (1995), the aim of sampling individuals with different demographic characteristics is not to generalise to people belonging to the same demographic group(s). Rather it involves sampling for variation in person related characteristics. A second kind of variation is phenomenal variation where variation on the target phenomena is looked for and the decision to seek phenomenal variation is made beforehand. Theoretical variation searches for theoretical idea, Sandelowski et al. (1992) and Sandelowski (1995) have addressed the notion of phenomenal variation sampling. It is initially carried out in qualitative research and enables theoretical variations to be identified. Then theoretical sampling begins.

The underlying principle of determining the appropriate sample size is that of theoretical saturation (Douglas 2003; Goulding 2002; Locke 2001). Theoretical saturation is reached, according to Strauss and Corbin (1998), in three ways: i) no new or relevant data seem to emerge regarding a category; ii) the category is well developed in terms of its properties and dimensions demonstrating variation; and iii) the relationships among categories are well established and validated. Regarding what is appropriate size for sampling, Strauss and Corbin (1998) suggest that in the case of interviews as a means of collecting data, there is no fixed sample size where theoretical saturation can be reached.

In contrast, some researcher argues that a specific number of subjects is necessary. For example, a sample of eight is enough for intensive interviews that are designed to explore a topic in-depth (McCracken 1988). Morse (1994) suggests that: about six participants are enough for phenomenologies aimed at discerning the essence of experiences: 30 to 50 interviews and/or observations are sufficient for ethnographies; and about 100 to 200 units of observation are required for qualitative ethnological studies.

There were two considerations regarding the appropriateness of the size of the samples in this study. First, the sample should be able to allow the researcher to investigate the phenomenon of interest from all relevant perspectives; and second, the sample size should be increased until no new view points are seen. In this study interviewees were selected who had experience in customer complaint management in the hotel industry. The profiles of the domain experts interviewed in this research include general manager, deputy/assistant manager, functional managers / supervisors across the major operational areas such as front desk, house keeping, human resource, sales and marketing, food and beverage, and IT infrastructure. The hospitality management academics were chosen according to their research expertise. The selection and conduct of interviews was an incremental and ongoing process which continued until the themes, categories, and patterns emerged in terms of supporting the formation of the hotel customer complaint management knowledge concept and the construction of the knowledge-enabled hotel customer complaint management model.

A total of 47 interviews were conducted in 11 different cities across five countries. Among the interviewees, 28 were working in hotels and 19 were working in

universities or research institutes, at the time of the interview taking place. The generalisability of the concept and the model has been improved as the result of the input from those interviewees with diversified background. Model development is based on data. As suggested by Kwortnik (2003) and Strauss and Corbin (1998), data collected from the first few interviews served as a guide for the researcher to narrow the research focus, thereby reducing the sample size required. That is particularly evident with the use of the category two interviews, which generally only focused on the aspects of the domain with which the participants were familiar.

Aside from the aforementioned considerations, some peripheral factors have affected the sampling size in this study. For example, Morse (2000) has argued that the researchers' interview skills and the nature or sensitivity of the phenomena being studied affect how difficult it is for research participants to open up and freely share their true thoughts with the researcher. In other words, if informants may not be willing to fully share their thoughts with the researcher, then there will be more interviewees required. For those issues that are less sensitive and participants which find easier to discuss, a smaller sample size is required. In this study, the interviewees were willing to share their views on knowledge management practices in customer complaint management in hotels. The sample size of this research is adequate to support the formation of the concept and the development of the model.

The Conduct of the Interviews

For the data collection process, semi-structure interview questions were designed. The semi-structured interview questions provided the researcher with an improved means of obtaining the relevant information from the interviewees. The researcher was able to probe the interviewees when further relevant questions rising during an interview. The semi-structured interview also allows the researcher to modify the questions depending on the flow of the conversation. This proved particularly helpful when interviewing someone whom the researcher has less knowledge about prior to the interview encounter. For example, many of the category two hotel practitioners were known by the researcher during his business trips as a patron of the hotel. With this circumstance, the researcher had less possibility of knowing the background of the particular interviewee such as his or her educational background, the employment history, and the domain knowledge prior to the interview meeting. The semi-structured interview provided the researcher with the opportunity to obtain the best possible responses of any given situations even when an interviewee was only familiar with certain aspects of the questions. This reconfirms that the semi-structured interview provides a flexible and responsive interaction between a researcher and the interviewees (e.g., Sykes 1991).

The researcher has made every effort to develop a detailed execution plan for the interviews. The detailed planing overcame some of the challenges related to knowledge acquisition from domain experts. For instance, after the interview, a hotel manager commented:

"... one of the reasons that I agreed to meet you was because the topic [of developing a knowledge-enabled model to support the management of hotel customer complaints] is very relevant to the issues that facing the management of a hotel every day. ... aside from I know... [name omitted, who introduced the researcher to the manager] well, your well-prepared introduction to the research project raised my curiosity for..."
(1H3).

This approach was similar to that of Healey (1991, pp210) *" a well-designed and presented letter, typed on headed note paper, which is personally addressed with a hand-written signature, would seem to be a sensible way to trying to persuade... managers of business to cooperate"*. The researcher also considered the nature of the settings of an interview when preparing for the conduct of the interview. Many of the interviews with hotel management staff were conducted in a formal environment where the participants were formally dressed. In such an environment, the researcher was also dressed formally with a working suit and tie. By contrast, the interviews with academics were less concerned with such aspect but more concerned on sending out relevant research information such as a description about the nature of and detailed the research project to stimulate the interest of potential participants. On all occasions, the project information, the required access of information, the anticipation from the potential participants, and the researchers' research interest and expertise have been passed on to the potential interviewees in a way or another. As a result, most of the discussions between the interviewees and the researchers were informative and adhered to the predefined themes.

7.2.3. The SQL-Database Approach

The analysis of the data was assisted by using the SQL and the purpose designed and built database. The SQL-database approach has provided an enhanced capability for the researcher to compare views of individual interviewees from different perspectives and dimensions. Compared to manual or off the shelf analyses software, this approach provides flexibility in terms of allowing the researcher to define, categorise, and compare themes and concepts. Although it is possible to manipulate the interview data manually, the workload would be overwhelming in terms of comparing and categorising the themes and concepts within the 47 sets of data. In this study, the use of the SQL-database approach increased efficiency and productivity compared to the manual approach used in qualitative data analyses.

The SQL-database approach has advantages over off the shelf software, especially in terms of providing an enhanced capacity for manipulating text based data. Most qualitative software requires users to define keywords or categories to support the manipulation of the text based data. Also most qualitative software requires users to rephrase certain terms of the data into a standardised form. With the SQL-database approach, the users work on a low level, command based language to interact with the data. The users can insert tags to the raw data instead of rephrasing the raw data. This avoids losing the original meaning of the text. This action is important in qualitative data analysis, where a researcher's view changes as the research progress. It is not uncommon that a researcher's interpretation of data changes over a period of time. Thus, the capability of comparing data from different time, space, and multiple dimensions is important for a qualitative researcher. In this research, the researcher

inserted some predetermined terms (the tags) into the raw data using the square bracket to enhance the capability of the data comparison. This allowed the researcher to query the database from various dimensions dynamically, thus giving him an understanding from different view points of the contexts either by the interviewees, questions, or by term(s), or a combination of them.

The SQL-database approach is still under experimentation but has shown some potential in terms of supporting the management of fieldwork scheduling, contacts, notes, storing fieldwork related data, and the analyses and comparison of text based data. However, the execution of this approach requires that users have technical knowledge in relation to database and query languages. This is a potential hindrance for applications of this approach.

7.3. The Research Outcomes

This research has adopted the object-oriented theory to represent the hotel customer complaint management knowledge and the knowledge-enabled hotel customer complaint management model. It is thus essential to evaluate the concept and the model including the formation process against modelling principles. The knowledge concept and the knowledge-enabled model are used to conceptualise how a knowledge-enabled approach can support the management of hotel customer complaints. In the domain of modelling, a conceptual model is a representation of the essential characteristics of the real world that is important for a problem domain. Dillon and Tan (1993) have argued that the process of construction of a conceptual model is a process of analysis and knowledge acquisition, which concerns capturing both the static and dynamic properties of the problem domain and is often no-committal to any specific implementation requirement.

In practice, a model is often viewed as an external and explicit object or entity that represents part of reality as seen by the people who wish to use that model. Although this research has adopted the interpretative approach, the model can still be evaluated against certain criteria. In this section, the model and the modelling process have been evaluated based on Pidd (2003)'s three dimensions of considerations for modelling:

a)   a view, based on logical empiricism, that a statement is an addition to scientific knowledge if it is an objectively correct reflection of factual observations;

b)   credited to Popper (1959) that all scientific knowledge is, in one sense, conjectural because no experiment could conclusively prove a theory to be true. In this view, truly scientific experiments are ones that could disprove a theory or part of a theory rather than ones that seek to confirm it; and

c)   is the commonplace notion of utilitarianism, which views scientific and technological knowledge as practical.

These three considerations have been summarised and re-categorised for clarification: objectiveness, reliableness, and usefulness.

In modelling, the concept of objectiveness requires that a model needs to be constructed by a modeller objectively and free from personal biases. A model needs to reflect the domain problem situation and solution. In this context, a modeller is required to stay away from potential biases, especially his or her own personal biases when collecting, and analysing data in the support of model construction. In his book *"Tools for think: modelling in management science"* (Pidd 2003) has emphasised the importance of objectivity in conceptual modelling. While objectivity in modelling is vital, it is also important to recognise that there is a need for subjectivity. The

approach taken in the study is subjectivist, with the assumption that reality is personally interpreted and socially constructed. Although subjectivists view a conceptual model as socially constructed within a problem domain, objectivity is fundamental for scientific enquiry and without objectivity, subjectivity is meaningless. It is therefore important for data modellers to be aware of the different philosophical assumptions and represent the comprehensive Universe of Discourse (UoD) in data modelling. In the end, a good conceptual model should thus reflect the UoD that the users share in the domain.

In line with the view of empiricism (Pidd 2003), this research has followed rigorous processes to collect, analyse, and construct the model. The concept, objects and relationships identified in this research are sourced from the domain experts. The initial concept and the model were subsequently discussed with the interviewees, in order to receive feedback to enable model improvement. Although the research has adopted an interpretative view point on modelling the researcher has taken precaution in terms of not letting his own personal perception on the domain to influence the interviewees. This is achieved through using open questions and probe techniques during the interviews. This approach has allowed the researcher to capture what the participants' view on the domain. That is to objectively capture knowledge within the potential users of the model.

Reliableness, in conceptual modelling denotes that a model is correct and the outcome is true. As Popper (1959) has argued, the truly scientific experiments are ones that can disprove a theory or part of a theory, rather than ones that seek to confirm it. This research has adopted Popper's view to validate the reliableness of the research. As part of the tasks of the category two interviews, the knowledge concept and the knowledge-

enabled model were discussed with interviewees to refine and validate the model. At a later stage of the interview process, the knowledge-enabled model was successfully used as a communication tool in which the participants and the researcher could establish domain specific discussions.

In this study attempts were made to refute the proposed concept and the model. In addition to discussing the initial concept and the model with the subsequent interviewees, the research utilised the peer reviewed publication process (refer to the LIST OF PUBLICATIONS on page i) to support the validation of the research. Consequently, the feedback gathered through the interviews and the peer reviewed publication process have been used to enhance the presentation, the notation, and the description of the concept and the model. This research is an exploratory study focusing on the theory building stage of the research. Although this research does not employ quantitative methods, reliableness of the model has been achieved by the adoption of the interpretative-qualitative approach to support the concept formation and model development.

The usefulness of a model refers to the applicability of the model in a given problem domain. Corresponding to the ordinary notion of utilitarianism (refer to Pidd 2003), the usefulness of the model has been evaluated. Knowledge management in hotel customer complaint management is a contemporary phenomenon. Theoretically, both the resource-based view of the firm and knowledge-based view of the firm value hold that the hotel customer complaint management knowledge can benefit a hotel in terms of creating a sustainable competitive advantage for the hotel. Practically, there is a need for knowledge management applications in hotel customer complaint management as identified in the hotel operational environment. The concept and the model support the

notion of knowledge identification, creation, sharing, and utilisation. It promotes efficiency and consistency in hotel customer complaint management. The concept and the model have been well received by both the practitioners in the hotel industry and the academics.

It is not the intention of the study to provide detailed micro level constructs for a knowledge management application for a particular hotel or hotel chains. However, many of the artefacts such as the objects and relationships identified in the concept and the model, are clearly applicable in some hotel organisations.

7.4. Chapter Summary and Conclusions

This chapter has evaluated the research in both the research methodological aspect and the modelling aspect. The research has adopted the interpretative research view point and a set of qualitative data collection and analysis methods which supported the formulation of the hotel customer complaint management knowledge concept and the construct of the knowledge-enabled hotel customer complaint management model. The evaluation of the research was carried out by comparing this research with the existing literature of interpretative-qualitative research theories in terms of the research process, the model formation, and the epistemological view point.

Following the self reflection process, the chapter discussed the validity and reliability of the research in the context of interpretative-qualitative paradigm. In examining the validity and reliability of the research, the impact of the sample size and the handling process in data collection and analysis was considered. Finally, the chapter evaluated

the model and the modelling process in terms of objectiveness, reliableness, and usefulness.

The next chapter will summarise the contributions of the thesis, the implications of the research, the limitation of the research, and introduce future research.

CHAPTER 8: CONCLUSION

8.1.Introduction

This research has adopted an interpretative-qualitative approach to investigate how knowledge management can lead to the advancement of pragmatic support for the management of hotel customer complaints. The research has formulated a hotel customer complaint management concept and developed a knowledge-enabled hotel customer complaint management model based on an empirical study involving interviews with domain experts. The researcher has conducted 47 interviews with domain experts in service management in the hotel industry and the academia. The interview data was analysed using qualitative data analysis methods assisted by using the Structured Query Language (SQL) and a purpose-built database for the research. The representation of the knowledge concept and the knowledge-enabled model has adopted the object-oriented theory. The Unified Modelling Language (UML) has also been adopted to depict the model and to facilitate the communication between the researcher, the interviewees and the readers.

This thesis has developed a better understanding of the hotel customer complaint management knowledge through knowledge representation and application, and explored the relevance of the knowledge to customer complaint management practice in the hotel settings. The hotel customer complaint management knowledge and the subsets of the knowledge such as dissatisfied customer knowledge, hotel employee knowledge, supplier knowledge, and structured hotel customer complaint management knowledge were examined in the thesis.

The knowledge-enabled hotel customer complaint management model developed in this thesis is relevant not only to the theoretical perspective of knowledge enquiry, but is also of practically importance to the hotel industry. The artefacts such as the concept, objects, and relationships, and the model are applicable to support the management of hotel customer complaints.

8.2. Summary of the Thesis

Chapter one highlighted the research background, research objectives, questions, and rationales. It then discussed the scope of the research, the methodology employed and the contributions of the research.

Chapter two reviewed the theoretical background of the research in relation to the notion of knowledge and knowledge management approaches. Knowledge management was represented in a range of literature from Information Systems and Computer Science to Management and its sub-disciplines and related areas. Both the resource-based view and the knowledge-based view of the firm value the concept that knowledge can lead the organisation to create sustainable competitive advantage. In this view, if knowledge is properly harnessed and leveraged, the organisation can stand out from its competitors. In practice, the ability of a firm to understand what kind of knowledge is important and how to apply that knowledge to support its business is the key requirement for knowledge management applications.

Understanding of the notion of knowledge is the first step for developing knowledge management applications. Data and information is related to knowledge, but having data and information is not equivalent to having knowledge. Data is a collection of

facts, measurements, and statistics, for example the description of a customer complaint. Whilst data may be the raw information of decision making, it cannot by itself indicate to the hotel what to do. Information on the other hand, is data endowed with relevance and purpose. Knowledge is value added information that enables users take action with meaning and purpose. Knowledge is the capacity and competency of individuals or organisations for managing individual affair or businesses activities. It can be explicit or tacit.

Explicit knowledge is knowledge, which can be expressed in words and can be easily communicated. Tacit knowledge is personal knowledge that is hard to formalise or articulate and is embedded in individual experience and shared and exchanged through interaction between people. Those two types of tacit and explicit knowledge in practice can range from highly tacit to fully articulable knowledge and rooted in organisational coordination, mechanism and routines. Effective knowledge management involves managing both tacit and explicit knowledge. It is concerned with identification, acquisition, creation, and application or reuse of knowledge. The conduct of knowledge management in an organisation involves manoeuvring organisational knowledge through executing knowledge management activities that operate on the organisation's knowledge resources.

The chapter also reviewed the object-oriented theory. Some of the object-oriented principles such as abstraction, generalisation & specialisation, and polymorphism were adopted to represent the concept and the knowledge-enabled model. In reviewing the object-oriented theory, the chapter included the UML notation, which has been adopted to depict the knowledge concept and the knowledge-enabled model.

Chapter three reviewed and examined the customer complaint management literature that is relevant to service or hospitality management. The purpose of the review was to put the study into a context. The field of customer complaint management research has been related to a wide range of academic disciplines including management and marketing and their sub disciplines such as service management, hospitality management, relationship management; consumer behaviour study; information technology; and knowledge management in a broad sense. Findings from various disciplines in the field of customer complaint management research are a valuable source of data for this research in terms of informing and supporting the formulation of the hotel customer complaint management knowledge concept and the knowledge-enabled hotel customer complaint management model.

The review was focused on the analysis of organisational structure, operating environment, and customer complaint management approaches in hotels. The findings of the analysis further pointed out the need for knowledge management applications in customer complaint management in hotels.

The management structure of a hotel is influenced by many factors such as the type and the size of the hotel and its management style. In full service hotels, employees are typically organised into operational units or departments. A typical full service hotel may include Room service, Food & Beverage, Human Resources, Marketing & Sales and Accounting. In the hotel industry, every individual unit or department has its very specific responsibilities. It is not a common practice to have a customer complaint department in hotels, so there is an expectation from the management that customer complaint management can be managed at the departmental level. Internally, hotels operate in an environment with: i) a high employee turnover rate; ii) high causal and

seasonal employment; iii) a high percentage of low skilled workers; iv) a high dependence on information technology; and v) a low paid workforce. Externally, hotels operate in an environment with: i) shrinking customer loyalty and increasing customer sophistication; ii) shrinking information asymmetry; iii) increasing emphasis on specific marketing segments; iv) changing customer preferences; v) increasing globalisation and collaboration; and vi) the development of a consumer rights movement.

The chapter also reviewed the current literature on customer complaint management and commonly practised approaches in the service industry. The review suggested the importance of relationship focused customer complaint management in different management approaches such as production-line focused and employee empowerment focused approaches.

Chapter four described the research methodology adopted for the research. It started with the discussion of philosophical assumptions and approaches considered in the research, and then moved to the research design involving data collection, analysis, conceptualisation, model development, and evaluation of the research.

The chapter discussed two epistemological perspectives, namely positivism vs interpretivism. The former argues that a causal relationship can be investigated scientifically and it is premised on prior fixed relationships within a phenomenon. The latter adopts a nondeterministic perspective to understand the various phenomena from the viewpoint of participants. The researchers do not impose a prior understanding of the situation but interpret a given phenomenon in a context.

This research focused on investigating how the domain experts view the social phenomena of knowledge management applications in hotel customer complaint management. It adopted an interpretivist stance in which the role of the researcher is to analyse and interpret the view points of the domain experts.

In the context of modelling, the ontological perspective of this research is subjectivist, which takes the view that reality is personally interpreted and socially constructed. Interviews with the domain experts such as employees of hotels and academics in hospitality management were the principle means of gathering knowledge for the attributes, objects, and relationships in the domain of knowledge management application in hotel customer complaint management. In this view, a model can be seen correct if it is consistent with the perception of the social group which participated in the research.

Based on the nature of the research problem and the adoption of the philosophical assumptions of the research, this research has adopted an interpretative-qualitative approach by interviewing domain experts in service management in the hotel industry and academia in hospitality management. The interpretative-qualitative approach adopted in this research has provided a set of guidelines and principles in relation to how the research was to be conducted.

The purpose of this research was to develop a better understanding on how hotel customer complaint management knowledge and its applications can lead to the advancement of pragmatic support to the management of hotel customer complaints. The study set two objectives:

i)   to identity the key knowledge attributes, objects, and relationships that are pertinent to the application of a knowledge-enabled approach in hotel customer complaint management; and

ii)   to suggest a practical application of the hotel customer complaint management knowledge to support a knowledge-enabled approach in hotel customer complaint management.

Following the discussion of the purpose and objectives of the research, the chapter discussed the design of the study. This research adopted a semi-structured interview method to interview the domain experts. A total of 26 interview questions were grouped into concepts, customer complaint management and knowledge management practices, and complaint management mechanisms. The interviews were conducted with 47 domain experts consisting of 28 practitioners and 19 academics.

Chapter five explained how the interview data was transcribed, analysed and interpreted. Doing so uncovered the lessons learned and best practices in knowledge management applications in hotel customer complaint management. The iterative and incremental development methods adopted from the object-oriented theory allowed the researcher to effectively use the interviewing process not only for knowledge acquisition but also for knowledge validation.

This research used a SQL-database approach to assist the analysis and interpretation of the interview data. The analysis of this research was focused upon analysing the patterns, categories and insights. The interviews were classified into two categories, according to the objectives of the interviews. The first category focused on knowledge acquisition to support the formation of the knowledge concept and the development of

the knowledge-enabled model. 17 of the 47 interviews were classified under this category. The second category focused on a discussion of those aspects that an interviewee was familiar with and to obtain feedback on the concept and the model.

All audio interview data was first transcribed into a text format soon after the completion of an interview. Then, the data was entered into a purpose designed and built database. The second phase of the SQL-database approach includes the design and execution of queries. This research used three types of queries: by interviewee, by question, and by terms. The third phase of the SQL-database approach involved the systematic comparison of information gathered through the querying process to support conceptualisation of concepts, objects, and relationships. The SQL-database approach promotes iteratively and incrementally analysing and interpreting the interview data. In practice, whenever applicable the idea, concepts, and relationships were discussed with the following interviewees after the interview.

The formation of the hotel customer complaint management knowledge concept was based on the analysis and interpretation of the interview data and informed by secondary literature. Although the interviews identified no existence of knowledge management projects in any of the 28 hotels, some of the best knowledge management practices; such as the adoption of advanced information technology to support customer complaint management, staff training initiatives, and the use of customer complaint management data was traceable across the whole spectrum of the 28 hotels, from top end five star hotels to three star tourist hotels.

The representation of the concept adopted the object-oriented theory. The knowledge concept has been defined as a superclass including four subsets of knowledge such as:

i) the dissatisfied customer complaint management knowledge class; ii) the employee customer complaint management knowledge class; iii) the supplier customer complaint management knowledge class; and iv) the structured hotel customer complaint management knowledge class. This chapter also discussed the tacit and explicit nature of the hotel customer complaint management knowledge and the roles of each subset of the knowledge in customer complaint management.

Chapter six represented a knowledge-enabled hotel customer complaint management model, which promoted the identification, creation and utilisation of hotel customer complaint management knowledge. The representation of the model adopted the object-oriented theory with the use of the UML notation. The model was discussed with both the operational perspective and the conceptual perspective. Within the operational perspective, the knowledge-enabled model depicted the potential users in relation to the goals and activities of the knowledge-enabled customer complaint management approach. In the conceptual perspective, the knowledge-enabled model depicted the attributes, the objects, and relationships among the objects that are pertinent to the knowledge-enabled approach in managing hotel customer complaints. The two perspectives were illustrated from different aspects of the same model.

The operational perspective of the model was represented by using the use case diagrams to illustrate the activities relating to the knowledge-enabled approach in hotel customer complaint management. Each of the sub use case uses its own sub use cases to achieve the sub goals. The use cases represent how the potential users interacted with systems. In this context, systems do not have to be computerised. The knowledge-enabled model promotes the identification, creation, and use of hotel customer complaint management knowledge.

The conceptual perspective of the model was represented by using class diagrams. Seven objects were identified as important to the knowledge-enabled hotel customer complaint management. The knowledge-enabled approach views that the effective management of hotel customer complaints can be improved by the identification, creation, and use of the customer complaint management knowledge concept. The chapter further drilled down the sub objects of the top seven objects, which provide artefacts for the implementation of such a representation for hotel organisations wishing to adopt the knowledge-enabled hotel customer complaint model.

Chapter seven evaluated the aspects of methodology adopted by the research and the outcomes of the research. The former was concerned with the appropriateness of the research process. The latter was focused on the validation of the research outcomes such as the hotel customer complaint management knowledge and the knowledge-enabled hotel customer complaint management model.

This research has adopted an interpretative-qualitative research approach. The chapter described how the criteria of validity and reliability were used to evaluate the research. Although this research was an interpretative-qualitative research, the researcher recognised the importance of objectivity, reliability, and usefulness aspects of a conceptual model.

In the process of modelling, efforts were made to objectively interpret data collected through the process of interviews. The initial concept, objects, relationships, and model were discussed with subsequent interviewees to increase the reliableness of the research outcomes. Many of the artefacts such as the concept, the objects, the relationships, and

the model are reusable and can be applied in practice to support a knowledge-enabled approach in customer complaint management for hotels.

Chapter eight began with a summary of previous chapters, and then moved to the implications of the research for theory and practice. Finally, the chapter discussed the limitations of the research and future research.

8.3. Implications

8.3.1. Implications for Theory

This study has provided a conceptual understanding of what constitutes hotel customer complaint management knowledge and how the knowledge is relevant to the management of hotel customer complaints. The knowledge attributes, objects, and relationships identified in this study have extended knowledge management theory in relation to the management of hotel customer complaints. The representation of the knowledge concept and the knowledge-enabled hotel customer complaint management model has adopted the object-oriented theory and the UML. The use of *Use Cases* and *Class Diagrams* to communicate between the researcher (the modeller), the interviewees, and the readers has further illustrated that the object-oriented theory can be applied not only to support the development of computer software systems but also conceptual modelling.

The study has also linked conceptual modelling to knowledge management. Conceptual modelling and knowledge representation are similar in terms of sharing the same fundamental assumptions through constructing certain views about the things and

concepts to represent and describe those things. A knowledge model evolves from information identification and selection through analysis, and data oriented structures to identify the essential nature of an organisation acting as a framework in the identification and development of some forms or subsets of organisational knowledge (i.e., explicit knowledge or tacit knowledge). In building knowledge models, conceptual modelling can be a useful method not only for identifying and representing organisational data and information but also for some subsets of organisational knowledge. While the process of identifying knowledge is not straightforward, it is an essential to represent the necessary knowledge structure as well as detect the analysis gap between what the organisation knows and what it needs to know in conceptual modelling.

As an exploratory, interpretative, and qualitative study, this research has provided a new insight on how the discipline of information systems can collaborate with and contribute to other academic disciplines. For example, i) the use of the purpose-built database and the Structured Query Language (SQL) for the support of qualitative data collection, analysis, and management is an innovative approach showing great potential in terms of providing an enhanced capacity for a researcher to compare and categorise qualitative data such as interview data; ii) the adoption of the object-oriented theory and the UML for modelling organisational knowledge which extends the object-oriented theory to support knowledge modelling; and iii) conceptual modelling as a valuable knowledge management tool by supporting knowledge identification, dissemination, use, and eventually creation.

8.3.2. Implications for Practice

Knowledge management application in hotel customer complaint management is an emerging field of study. Both of the resource-based view and the knowledge-based view of the firm maintain that organisational knowledge is the most sustainable source for creating competitive advantage for an organisation. Considering the organisational structure and the operating environment of hotels, the effective management of knowledge related to customer complaint management enables a hotel to stand out in the competition and outperform its rivals by retaining customers and improving its quality of business operation. The development of this view requires a hotel to have a good understanding about what knowledge is important in the management of hotel customer complaints, and how to apply such knowledge to the management of the hotel.

This study has formulated the hotel customer complaint management concept and the knowledge-enabled hotel customer complaint management model. The knowledge-enabled model developed in this thesis promotes identification, creation, share, and use of hotel customer complaint management knowledge that aims to provide consistent and efficient support to hotel customer complaint management. The concept, objects, and relationships introduced in the thesis are valuable artefacts and can be applied by hotel organisations.

The knowledge-enabled model promotes the handling, analysis and utilisation of the hotel customer complaint management knowledge. The application of the knowledge-enabled approach in customer complaint management will support hotel organisations to develop better customer complaint management procedures, policies, and systems.

8.4. Future Research

One of the key limitations of the research is that the primary source used to formate the concept, and to develop and validate the model was based on interviews with the domain experts involved in the study. It would be very desirable to have further research based on quantitative methods focusing on evaluations of the findings in order to refine, and prove or disprove the results.

As an exploratory research project focused on theory building, this research has proposed a set of questions which may be used as the basis for future research: For instance, *how can computerised knowledge-enabled hotel customer complaint management systems assist the effective management of hotel customer complaints?* To extend the current research, there is a need for further study to realise the conceptual knowledge-enabled model with a physical computer software system capable of providing support to

i)   customer complaint handling processes such as complaint registration, workflow assignment, and complaint handling scheduling and monitoring;

ii) information and knowledge sharing facilities; and

iii) intelligent advice on best resolutions for customer complaints with either case based or rule based reasoning. In terms of knowledge support, questions such as *what are the effects of knowledge-flow between a hotel and the dissatisfied customers who complain to the hotel? And, Will the full support of advice on BATANA (best alternative for a negotiated agreement) enhance the effectiveness of the resolution of customer complaints?* These questions deserve further research endeavours. Findings from the future research could

potentially further enhance the understanding and applicability of the knowledge-enabled approach in customer complaint management.

8.5.Chapter Summary and Conclusions

The implications of the research have been broadly discussed in relation to the theoretical dimension and the practical dimension. This research adopts an object-oriented model approach to represent the hotel customer complaint management knowledge and the knowledge-enabled hotel customer complaint model. This approach has extended the object-oriented theory and the UML not only for systems analysis, design and implementation, but also for knowledge representation and conceptual modelling to support knowledge management applications.

The application of the SQL-database approach in this research is innovative. Although this approach requires the technical knowledge of the users for designing and executing the queries, the research has illustrated that it can be a useful tool for the support of fieldwork and data analysis, and interpretation for qualitative researchers. The applications of this approach have given a new insight on how the information systems discipline can contribute to other academic disciplines.

As an exploratory, interpretative, and qualitative research, this thesis has also discussed the limitation and future research related to the study by putting forward some research questions upon which future research can be built.

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APPENDIX A: INTERVIEW QUESTIONS

Concepts

1. How do you define the terms of customer complaint and customer complaint management?

2. With knowledge now widely recognised as a key resource and source of competitive advantage many companies regard themselves as knowledge-based and have adopted strategies to facilitate this. Do you see it as relevant to your hotel?

3. For operational purposes knowledge management refers to as using individual and corporate know-how such as ideas, judgements, systems, and expertise. If knowledge management would provide benefits to the management of hotel customer complaints to your hotel, which specific benefit(s) are you more inclined to expect?

4. How would you define knowledge in the context of hotel customer complaint management?

5. How do you view the differences between data, information and knowledge in the context of hotel customer complaint management?

Complaint management and knowledge management practices

6. What kinds of knowledge are important to the effective management of customer complaints in hotels?

7. In your experience, what are the major types of customer complaints in the industry?

8. How do you see the importance of having a clear complaint management policy and procedure in place in a hotel (possibly rank 1-5)? (For example, extremely important -5, no important - 1)

9. How do you see the importance or relevance information systems in hotel customer complaint management (possibly rank 1-5)? (For example, extremely important -5, no important - 1)

10. From your point of view (as a manager or a complaint handler), what are the possible consequences (or the risks) of failing in addressing a customer's complaints?

11. What are the problems facing in hotel management?

12. What are the critical factors for effective customer complaint management?

13. In your opinion, what are the potential benefits and pitfalls for managing customer complaint management knowledge?

14. Would you agree that knowledge can be managed?

Mechanism

15. How would you describe your hotel's organisational structure?

16. Is there a complaint management department in your hotel? If yes, how does the department relate to other functional units (or department) in your organisation and does the complaint management department have clear goals and definite budget accountability? Probe: If no, how complaint is handled in your hotel?

17. Do you use any customer complaint management software? If yes, what kind of software do you use? If no, what kind of main functions do your want to see?

18. Does your hotel analyse customer complaint data collected during the customer complaint handling process? If yes, what kind of methods (such as quantitative and qualitative) does your hotel use for the analyses?

19. How does your hotel identify customer complaint management related knowledge?

20. Does your hotel store the customer complaint management related knowledge? If so, how?

21. What are the mechanisms for sharing the customer complaint management related knowledge?

22. What kind of mechanism support can make the management of customer complaint more consistent and efficient?

23. Is there a customer complaint handling procedure known to all staff in your hotel for acting on complaints?

24. Does your hotel have regular staff meeting or training on how to handle customer complaints? if yes, what are the major activities involved for the training?

25. Does your organisation empower the front line staff in resolving customer complaints? and to what extent?

26. What are the main communication channels for customer complaint handling in your hotel?

APPENDIX B: SUMMARY OF THE SQL COMMANDS

Summary of the SQL Commands	
Query Type	**Command**
By Interviewee	*SELECT [Interview details].Interview ID ?* *FROM [Interview details]*
By Question	*SELECT [Interview details].Q ? FROM* *[Interview details]*
By Term	*SELECT [Interview details].Q ? FROM* *[Interview details] WHERE ((([Interview* *details].Q?)="term n"));*

Table 11: Summary of the SQL commands

APPENDIX C: DEFINITION OF KEY TERMS

Abstraction	Abstraction is one of the principal concepts of the object-oriented modelling theory. It aims to reduce details required for models.
Customer complaint	A customer complaint is essentially a statement made by a dissatisfied customer about his or her unmet expectations.
Employee empowerment approach	The notion of employee empowerment describes a situation where employees are given the authority to act with a certain degree of latitude in the service process.
Epistemology	Epistemology is concerned with what constitutes acceptable knowledge within a particular field of study.
Explicit knowledge	Explicit knowledge is knowledge, which can be expressed in words and can be easily communicated and shared in the form of hard data, scientific formulae, codified procedures or universal principles.
Generalisation & specialisation	Generalisation & specialisation describe logical relationships between objects.
Hotel	Hotel is often defined as an accommodation establishment offering guest rooms, food and beverage, and amenities to guests

Hotel customer complaint management knowledge	The hotel customer complaint management knowledge has been modelled as a superclass, which represents a special type of knowledge relevant to the management of hotel customer complaints. To make the hotel customer complaint management knowledge more explicit and applicable, this research has modelled the knowledge into four subsets include: i) dissatisfied customer complaint management knowledge; ii) employee customer complaint management knowledge; iii) supplier customer complaint management knowledge; and iv) structured hotel customer complaint management knowledge.
Hotel service failure	In the hotel industry, a service failure is considered to be a situation where a hotel organisation is unable to deliver the promised quality of services to meet the customer's expectation.
Knowledge-based view of the firm	The knowledge-based view contends that knowledge is the key resource and the only resource capable of creating sustainable competitive advantage.
Knowledge management	Knowledge management refers to a systematic and integrative process of co-ordinating organisation-wide activities of acquiring, creating, disseminating, and using knowledge by individuals and groups.
Object	An object is a building block of any models in object-

oriented modelling.

Object-oriented modelling	The basic object-oriented modelling construct of an object builds on the concept of an imaginary actor. Actors can be used to model real objects, but they can also be used to model imaginary objects that represent people's ideas. It focuses on finding and describing the objects, concepts, and relationship in a problem domain.
Ontology	In knowledge engineering and conceptual modelling, an ontology defines the basic terms and relations comprising the vocabulary of a topic area and the rules for combining terms and relations to define extensions to the vocabulary.
Polymorphism	Polymorphism refers to the ability of different objects reacting to certain messages differently.
Production-line approach	The production-line approach promotes standardisation and task specialisations, training and supervision.
SQL	Standard query language.
Resource-based view of the firm	The resource-based view argues that inter-firm performance differences occur through heterogonous access to valuable resources.
Tacit knowledge	Tacit knowledge is personal knowledge that is hard to formalise or articulate, embedded in individual

experience and is shared and exchanged through direct, face-to-face contact.

UML   The Unified Modelling Language (UML) is a graphic modelling language managed by Object Management Group, an open consortium of companies. The UML was evolved out of the unification of many object-oriented graphical modelling languages in the 1980s and 1990s.