

**THE EFFECT OF KNOWLEDGE MANAGEMENT ON COMPETITIVE
ADVANTAGE WITH ORGANISATIONAL CULTURE AS A MEDIATOR
IN MALAYSIAN CONSTRUCTION COMPANIES**

by

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**KESAN PENGURUSAN PENGETAHUAN PADA KELEBIHAN DAYA
SAING DENGAN BUDAYA ORGANISASI SEBAGAI MEDIATOR DALAM
SYARIKAT-SYARIKAT PEMBINAAN MALAYSIA**

ABSTRAK

Kajian ini menyiasat hubungan antara proses pengurusan pengetahuan, budaya organisasi, dan kelebihan daya saing dalam syarikat-syarikat pembinaan di Malaysia. Objektif utama adalah untuk menyiasat secara empirik kesan perantara budaya organisasi kepada hubungan antara pengurusan pengetahuan dan kelebihan daya saing. Selain itu, ia bertujuan untuk mengkaji hubungan antara pengurusan pengetahuan dan budaya organisasi, pengurusan pengetahuan dan kelebihan daya saing, dan menentukan jenis budaya yang dominan dalam syarikat-syarikat pembinaan di Malaysia. Menggunakan simple random sampling, 84 syarikat pembinaan Gred 7 CIDB Malaysia disampel dari 4,462 daripada jumlah total populasi di Malaysia bahagian Barat dan Timur. Saiz sampel telah dijustifikasikan dengan analisis Power Post-Hoc menggunakan G*Power untuk mengira kesesuaian saiz sampel. Instrumen kajian yang digunakan adalah instrumen Lawson (2003), Cameron dan Quinn (2006), dan Byrd dan Turner (2001). Analisis data dilakukan dengan menggunakan SEM-PLS. Hasil kajian menunjukkan bahawa budaya organisasi adalah sebahagian elemen perantara pada hubungan antara proses pengurusan pengetahuan dan kelebihan daya saing. Hasil kajian juga menunjukkan bahawa terdapat hubungan yang signifikan antara proses pengurusan pengetahuan dan budaya organisasi, dan juga hubungan yang positif antara proses pengurusan pengetahuan dan kelebihan daya saing. Penemuan lainnya menunjukkan bahawa klan adalah jenis budaya dominan dalam syarikat-syarikat pembinaan Malaysia.

**THE EFFECT OF KNOWLEDGE MANAGEMENT ON
COMPETITIVE ADVANTAGE WITH ORGANISATIONAL CULTURE AS A
MEDIATOR IN MALAYSIAN CONSTRUCTION COMPANIES**

ABSTRACT

This study investigates the relationship between knowledge management processes, organisational culture, and competitive advantage in construction companies in Malaysia. Its main objective is to empirically investigate the mediating effect of organisational culture on the relationship between knowledge management and competitive advantage. Additionally, it was meant to investigate the relationship between knowledge management and organisational culture, knowledge management and competitive advantage, and determine the dominant culture type in construction companies in Malaysia. Using simple random sampling, 84 CIDB Malaysia's Grade 7 construction companies were sampled, from 4,462 of total population from West and East Malaysia. The sample size was justified with Post-Hoc Power Analysis using G*Power to calculate the appropriateness of sample size. The research instruments used were the questionnaire based on Lawson (2003), Cameron and Quinn (2006), and Byrd and Turner (2001). The main data analysis was performed using structural equation modelling (SEM) – partial least squares (PLS). The findings indicate that organisational culture partially mediates the relationship between knowledge management processes and competitive advantage. The findings also indicate that there is a significant relationship between knowledge management processes and organisational culture, and positive relationship between knowledge management processes and competitive advantage. The last finding shows that clan culture is the dominant culture type in Malaysian construction companies.

CHAPTER 1

INTRODUCTION

1.1 Introduction

The purpose of this chapter is to introduce the study. The first section discusses about knowledge management, organisational culture, and competitive advantage. The following section presents the research problem, research model, and the research questions. The next section discusses the background of the problem, the justification for the study, and defines important terms. Next, a brief explanation of the methodology of this research is presented followed by a description of significance of the study. Furthermore, this chapter describes the organisation of the study.

1.2 Background

The fundamentals of organisational competitiveness have been moving towards knowledge emphases (Riahi-Belkaoui, 2003). Knowledge has become an enduring source of competitive advantage Nonaka (1994), and it has come to the frontage of organisational research and government policy, with terms such as ‘knowledge management’ and ‘knowledge economy’ becoming more and more eminent. Thus, the only strategic asset which grows in use rather than deteriorating is knowledge (Walters, 2002). In any competitive setting, intangible resources are possibly to produce a competitive advantage, among which human capital is usually the most vital because it’s difficulty in imitating where human capital refers to the knowledge, skills, and abilities which are embodied in the people (Jackson, DeNisi, & Hitt, 2003) where human capital refers to the knowledge, skills, and abilities which are embodied in the people (Coff, 2002).

In modern management, knowledge management is an important issue (De Long & Fahey, 2000; McCuiston & Jamrog, 2005). Moreover, knowledge management has emerged as a strategic philosophy assisting firms to develop strategic capabilities to deal with the enhanced dynamism and uncertainty of the business environment. Scholars and practitioners recognise the importance of knowledge to organisations in achieving and maintaining a competitive advantage (Ciganek et al., 2008; De Long & Fahey, 2000; Lai & Lee, 2007; Leonard-Barton, 1995). Some scholars consider that knowledge is the most valuable and important

resource possessed by an organisation (Chang & Lee, 2007), while others affirm that knowledge is critical to an organisation's survival (Davenport & Prusak, 1998).

Many organisations have begun on knowledge management as a core strategy to improve their organisational performance (De Long & Fahey, 2000; Inkpen, 1996; Zack, 1999). Broadly, knowledge management is now recognised as a competitive advantage, and a growing number of organisations are incorporating the knowledge management strategy (Buckley & Carter, 1999; Inkpen, 1996; Marshall, Prusak, & Shpilberg, 1996). De Long and Fahey (2000) point out that a large number of organisations that implemented knowledge management as a corporate strategy have not achieved their objectives and have a growing sense of disenchantment about the practicality of knowledge management.

Early research in the field of knowledge management focused on technology as the key enabler of information transfer (McCuiston & Jamrog, 2005). Practitioners have made significant investments in information technology to support knowledge management initiatives (Benbya, 2006), unfortunately many of these knowledge management initiatives have failed to produce the expected results (Bell DeTienne, Dyer, Hoopes, & Harris, 2004). Davenport, Prusak, and Strong (2008) contended that while useful in some ways, the knowledge-management efforts haven't necessarily led to better products and services, more effective employees or superior work processes.

In knowledge management agenda, organisation culture is increasingly more recognised as a major obstacle to leveraging intellectual resources (De Long & Fahey, 2000). Academicians have emphasised the need to study the human factors involved in knowledge management (Chin-Loy & Mujtaba, 2011). Furthermore, scholars have identified organisational culture as an important factor in how a firm manages its knowledge (Alavi & Leidner, 2001). Since culture can perform as a barrier or an enabler of knowledge creation and transfer (Alavi & Leidner, 2001), organisations need to consider culture before engaging in knowledge management initiatives (Ribiere & Roman, 2006). If an organisation understands its culture type, it can consider the degree of fit required between its knowledge management practices and culture for a given business environment. In addition, the organisation can create a culture that promotes knowledge sharing which is important to its success (Chin-Loy & Mujtaba, 2011).

Recently, the vision of knowledge as a valuable asset to construction companies has become extensively acknowledged and has gained significant attention (Rezgui et al., 2010). In construction industry, there has been a rising importance positioned on knowledge management as proper management of knowledge is an essential part of the industry survival (Dave & Koskela, 2009; Mohamed et al., 2006). Unfortunately, the implementation of formal knowledge management in Malaysia including within construction industry is still in infancy (Rahman, 2004), therefore, construction companies should acquire a broader outlook of the significance of knowledge as a valuable asset in obtaining the competitive advantage, and considering knowledge

management initiatives as a part of company's strategic management agenda to achieve organisations' goals.

1.3 Research Problem

The construction industry represents one of the most dynamic and complex industrial environments. In developing countries like Malaysia, the construction sector forms a high percentage of the economy. Despite its great economic importance, the construction industry regularly shows lower levels of productivity when compared to other industries such as manufacturing industry. The fact shows that Malaysia's economy has gained a remarkable growth over past more than three decades (Frances, 2002) but the construction industry has carried out magnificent projects without cost, time and quality effective (Hamzah, 2003; Imtiaz & Ibrahim, 2005; Pratt, 2000). Moreover, construction industry has poor image in having low productivity and performance (Abdul Rahman et al., 2006; Ibrahim et al., 2010; Pratt, 2000).

It is widely accepted that globalisation accounts for the higher level of the importance of competitiveness (Flanagan, et, al, 2005). In today's global market, construction industry is facing various challenges, such as economic swings, new markets emerging in the global economy, increasing competition, the impact of technology, new and increasing demands from clients, customer and society, and the requirement to maintain a highly skilled workforce at all levels (Chen et al., 2005;

Egbu & Robinson, 2005). The global growing competition forces construction organisations to rethink their construction for improving productivity, quality, and efficiency (Kärnä & Junnonen, 2005). To stand in the challenges of the twenty-first century, the Malaysian construction industry must compete through continuous productivity improvement, more value-added operations and enhanced product quality (Zaini, 2000). As Porter (1985) contended, productivity is the real source of competitive advantage, and competitive advantage can lead to high performance. In this case, with low productivity and performance, Malaysian construction companies will lose their competitive advantage to struggle in the local and international market.

The role of knowledge management and organisational culture to achieve competitive advantage is generally accepted. The increasing importance of knowledge in the modern and global era, organisations started to initiate a need to focus on managing knowledge as competitive and an organisational asset (Davenport et al., 1998; Gupta & McDaniel, 2002) as well as a source of wealth (Davenport & Prusak, 2000). Many researchers have emphasised on the importance of competitive circumstances through strategic cultural development for knowledge management (Cabrera & Bonache, 1999; Chin-Loy & Mujtaba, 2011).

In general, the adoption level of knowledge management in Malaysia is at a moderate degree, and this can be due to the fact that knowledge management is still at an emerging stage (Khoon & Mah-Hui, 2011). Although knowledge management is important for construction sector due to its role in company's success (Asmi et al., 2009), knowledge management practices could be considered as relatively new in the

Malaysian context as most organisations are at the early stage of formal knowledge management implementation (Rahman, 2004). Thus, the degree of knowledge management practice in construction companies in Malaysia is still in its infancy phase (Abdul-Rahman & Wang, 2010).

To take advantage on knowledge management, Malaysian construction organisations have to keep up with the dynamic needs in the market (Mohd Zin & Egbu, 2010). In implementing knowledge management strategy, Malaysian construction organisations need to be aware of the challenges that may hinder the success of knowledge management initiatives. The major challenge lies on the people-related factors as attitudes and habits are the most difficult factors to change (Dainty et al., 2005). Moreover, it has been confirmed that professionals in the Malaysian construction industry recognise stronger dependency on human capital, while technological advancement is said to be a minor supporting aspect for improved knowledge management (Abdul-Rahman & Wang, 2010).

In the global view, Malaysian government has an objective to develop the capacity and capability of the construction industry through the enhancement of quality and productivity by placing great emphasis on professionalism, innovation and knowledge, in the endeavor to improve the quality of life (CIDB, 2012b). To achieve the objective, the government together with CIDB has put many efforts to upgrade the level of knowledge and skills among the construction player. The Construction Industry Master Plan (CIMP) 2006-2015 is a comprehensive plan

charting the strategic position and future direction of the Malaysian construction industry over 10 years. The overall underlying thrust of CIMP emphasises on four main aspects in order to improve the Malaysian construction industry involve: 1) The importance to upgrade skills and knowledge of construction workforce; 2) Modernisation of the industry; 3) Application of new technology; and 4) Continuous innovation in the industry (CIDB, 2006). Thus, the CIMP provides a long-term direction and guide for the Malaysian construction industry. Looking at those four aspects, knowledge emphasis is one of the agenda of Malaysian government in improving the quality of Malaysian construction industry. Managing the knowledge in the construction companies as part of construction industry will help the government to achieve the goals.

Considering the need to focus on managing the knowledge for construction companies in Malaysia, this study attempts to investigate knowledge management programme with the involvement of organisational culture in construction companies in Malaysia, as a holistic approach as one of the solution for the problems faced by construction companies in Malaysia. With such deliberation, Malaysian construction companies are expected to improve their performance and as a part of the organisational goals to achieve competitive advantage in the global market.

The purpose of the current study is to empirically investigate the relationship between knowledge management and competitive advantage with organisational culture as a mediator in Malaysian construction companies. There is no known study

that has attempted to investigate the relationship between knowledge management and competitive advantage with the role of organisational culture as a mediator, especially in construction organisations.

1.4 Research Questions

With reference to the previous sections, the research questions are thus formulated as;

1. How does knowledge management processes relate to organisational culture in Malaysian construction companies?
2. How does knowledge management processes relate to competitive advantage in Malaysian construction companies?
3. How does organisational culture mediate the relationship between knowledge management processes and competitive advantage in Malaysian construction companies?
4. What is the dominant culture type in Malaysian construction companies?

1.5 Research Objectives

Responding to the main inquiry of the study to identify the relationship between knowledge management processes, organisational culture and competitive advantage in the context of construction companies in Malaysia, the research objectives for this study are the following:

1. To investigate the relationship between knowledge management processes and organisational culture in Malaysian construction companies.
2. To investigate the relationship between knowledge management processes and competitive advantage in Malaysian construction companies.
3. To investigate the mediation effect on the relationship between knowledge management processes and competitive advantage in Malaysian construction companies.
4. To determine the dominant culture type in Malaysian construction companies.

The research objectives involve determining whether an organisation's investments in knowledge management are paid-off through organisation's capability to compete and gain the advantage. Linking knowledge management and organisational culture makes a strong case for adopting and funding knowledge management and demonstrating its benefits. More research is required to help practitioners and academics understanding the role of organisational culture and cultural strength in knowledge management (Ba, 2004; Chin-Loy & Mujtaba, 2011;

Lawson, 2003; Obenchain, 2002). Although it is highly feasible that there is a relationship between knowledge management, organisational culture, and competitive advantage, there are very low numbers of empirical studies have been found in proving that relationship (Chin-Loy & Mujtaba, 2011). Moreover, other studies have emphasised the relationship between two factors such as knowledge management and organisational culture, rather than the influence of organisational culture on the relationship between knowledge management and organisational objectives, such as performance and competitive advantage.

Lawson (2003) attempted to integrate the fragmented literature of knowledge management into a holistic view and developed a framework of knowledge management processes to examine the relationship between knowledge management and organisational culture. Several studies have validated the framework of knowledge management processes created by Lawson (Chang & Lee, 2007; Jones, 2010; Kangas, 2009; Nayir & Uzunçarsili, 2008; Obenchain & Johnson, 2004). Cameron and Quinn (2006) developed the competing values framework (CVF) in conjunction with organisational effectiveness to determine organisational culture type. Several research studies have validated the framework of competing values created by Cameron and Quinn (Jones, 2010; Lai & Lee, 2007; Lawson, 2003; Nayir & Uzunçarsili, 2008; Obenchain & Johnson, 2004). Byrd and Turner (2001) developed instrument for competitive advantage and defined the elements for competitive advantage. Several research studies have validated the instrument of competitive advantage created by Byrd and Turner (Chuang, 2004; Nguyen, 2010). However, the combined frameworks of knowledge management, organisational

culture, and competitive advantage have not been tested in Malaysian business environment.

1.6 Significance of the Study

This study is an attempt to expand the extensive literature in strategic management and knowledge management by contributing especially in the theory expansion of knowledge management. From the critical review of the existing literature on knowledge management, organisational culture, and competitive advantage, a holistic theoretical model is developed. This study is meant to investigate the relationship between knowledge management processes (with six dimensions; creating, capturing, organising, storing, disseminating, and applying), organisational culture (with six dimensions; dominant characteristics, organisational leadership, management of employees, organisation glue, strategic emphases, and criteria of success), and competitive advantage (with four dimensions; innovativeness, market position, mass customisation, and difficulty in duplicating). Beside the direct relationship between the variables, this study intends to investigate the mediating role of organisational culture in the relationship between knowledge management and competitive advantage. This is an extension of a study conducted by Chin-Loy and Mujtaba (2011), who examined the moderating effect of organisational culture in the relationship between knowledge management processes and organisational benefits, in which they positioned competitive advantage as a part of organisational benefits. Additionally, realising the importance of diagnosing the

culture type in the organisation, this study also attempts to determine the dominant culture type in construction industry in Malaysia.

There is a lack of empirical evidence in the literature on knowledge management, organisational culture, and competitive advantage, especially in the context of developing countries. As most of the study on knowledge management and organisational culture have been developed and empirically tested in developed country such as the United States of America (Jones, 2010; Kangas, 2009; Juan A Román-Velázquez, 2004), this study makes a contribution to the literature by testing the measurement model empirically in a developing country like Malaysia, and focusing the construction companies as a part of construction industry.

The implications of this study can be a significant value to organisations as they prepare to implement knowledge management initiatives. The findings could help organisations to assess the prospect that implementation of knowledge management initiatives will be successful or will increase the organisation's competitive advantage in relationship to the current organisational culture. This is of paramount importance because organisational make significant investments of time, money, and personnel when they embark on knowledge management initiatives (Parikh, 2001). A better understanding of the relationship between knowledge management and organisational culture may increase organisational capability to make wise choices regarding how these resources will be managed in order to achieve organisational objectives, such as competitive advantage. As the global economy moves to a more knowledge-based

economy, the long term-wellbeing of organisations demands that implementation of strategic business initiatives should be done successfully.

The management of knowledge and culture no more doubt can lead to organisational performance (Denison, 1990; Gordon & DiTomaso, 1992; Lee & Choi, 2003; Scholz, 1987). Competitive advantage leads to high performance (Porter, 1985). By properly managing the knowledge and culture in the organisation, the chronic problem of low performance and low productivity in Malaysian construction industry can be overcome.

Further understanding of the relationship between knowledge management and organisational culture can assist managers in implementing a knowledge management system concerning the current organisational culture type to achieve competitive advantage, and also provide a theoretical ground for researchers to pursue a deeper understanding of knowledge management for the future research.

1.7 Thesis Organisation

This thesis consists of six chapters. Chapter 1 states the background of the study in general and with reference to the construction industry and specifically Malaysian construction industry, research problem, research questions and research objectives, followed by the purpose of the study, research methodology adopted, significance of the study.

Chapter 2 provides a review of various research literatures that relates to knowledge management in general followed by historical background, theoretical foundations, definitions of knowledge management and knowledge management cycles. It further explains organisational culture and organisational culture assessment. The examination of organisational culture and the various models of diagnosing culture are discussed, including the Denison and Schein's model, following by the Competing Values Framework. It further explains the attributes of competitive advantage and relates knowledge management and competitive advantage through intervention of organisational culture. It also highlights the knowledge management in construction industry and specifically in Malaysian construction industry. At the end of the chapter, the theoretical framework and research model are presented.

Chapter 3 considers the presentation of the research methodology adopted to achieve the research objectives. It examines the research design, survey method, sampling and procedure. Thereafter, the instrument for data collection, measurement, and pilot study, suitable methods, approaches, and techniques are discussed. This chapter describes the theoretical model of knowledge management assessment, organisational culture and competitive advantage, the data used to analyse this model, and the methods employed to conduct the analysis of data.

In Chapter 4, the first section presents the respondents' profiles, followed by the profiles of the firms. The chapter also presents the results of testing the conceptual

model using the Partial Least Squares method of exploratory/confirmatory analysis with the SmartPLS[®] software in which the relationships between creating knowledge, capturing knowledge, organising knowledge, storing knowledge, disseminating knowledge, and applying knowledge with innovativeness, market position, mass customisation, and difficulty in duplicating as competitive advantage dimensions were examined with mediation of organisational culture through dominant characteristics, organisational leadership, management of employees, organisation glue, strategic emphases and criteria of success, through SOBEL test with bootstrapping proposed and developed by Preacher and Hayes (Hair et al., 2013; Hayes & Scharkow, in press; 2008). Then, the hypotheses testing are performed using partial least squares (PLS) method. It also presents evidence for the statistical validity of the results and the structural integrity of the model. Furthermore, the organisational culture type of construction companies in Malaysia is identified using organisational culture assessment instrument (OCAI). The last part of the chapter presents and Post-Hoc test of Herman's Single Factor test for common method variance/bias accounting and Power analysis.

Chapter 5 presents the an overview of the methodology, findings and discusses the results of the study with reference to initial model and mediated model evolution.

Chapter 6 concludes the study as well as points out certain limitations of the study. It also points to the contribution this study has made for academics and practitioners in knowledge management and construction related companies. It further gives recommendation and direction for future research.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter will review the literature relevant to the study. The first section discusses the historical and theoretical aspects of knowledge management. The next section examines the definition of knowledge management and the knowledge management cycle. The following section examines organisational culture and the various models of diagnosing culture. The models include the Denison and Schein's model, following by the Competing Values Framework. The next section will present the empirical research associated with knowledge management, organisational culture, and competitive advantage. The picture of knowledge management in construction and construction industry in Malaysia will be presented in the next section. The contributions of this study and the summary will be presented at the end of the chapter.

2.2 Knowledge Management

Regardless of the vast numbers of literature on knowledge management, there is no definition of knowledge management generally accepted (Earl, 2001; Manovas, 2004), and there is no particular definition for knowledge management (Desouza, 2005; Gorelick & Tantawy-Monsou, 2005). However, in the knowledge management literature there is a large number of existing definitions of knowledge management (Grossman, 2006; Lloria, 2008).

2.2.1 Historical Background of Knowledge Management

The history of knowledge management originally appeared with the earliest societies (Ives, Torrey, & Gordon, 1998). The Library of Alexandria in Egypt (Third Century BC) was referred as the exertion to conserve valuable knowledge (Ives et al., 1998). Newing (1999) asserted that the use of parchment started around 200 BC and paper in 100 AD. He noted that to ensure the preservation of these documents, monks in monasteries made copies of important documents making them the first knowledge professionals. Newing (1999) opined that the invention of the printing press in the 15th century allowed for the mass distribution of written documents and knowledge at a low cost. Lemak (2004) asserted that in 1930s, The Hawthorne Studies marked the beginning of the human relations movement in management. This approach is no longer exclusively placed an emphases merely on efficiency and the individual worker but on the human relation capability of the manager (Lemak, 2004).

The study of knowledge has been a central concern among philosophers since Plato and Aristotle (Nonaka & Takeuchi, 1995). Frederick Taylor was among early management theorists who used the knowledge acquired from examining and studying manual work in his concepts of Scientific Management, which emphasised the productivity of the manual worker (Drucker, 1999).

While in modern era, global competition transformed the U.S. economy from industrial and service-based economy to a knowledge-based economy (Ives et al., 1998; Weymes, 2004). As the forces of global competition emerged, the study of knowledge and knowledge management became a topic of interest to organisations (Wiig, 1997). According to Prusak (2001), knowledge management was a response to the changing economic and social trends. Peter Drucker was perhaps the first management academician to recognise the importance of knowledge in the emerging economy and coined the term “knowledge worker” in his 1959 book *Landmarks of Tomorrow* (Ichijo & Nonaka, 2007). Drucker (1969) recognised that the industrial economy based on manufactured goods had shifted to a knowledge economy (Stewart et al., 2000). In 1986, Karl M. Wiig coined the term “knowledge management” in a keynote address at the International Labour Organisation Conference (FAA Knowledge Services, 2012; Freeman, 2007; Román-Velázquez, 2004). In 1993, the first conference devoted entirely to knowledge management was held in Boston (Prusak, 2001). *Managing Knowhow* by Sveiby and Lloyd’s (1987) was the first knowledge management book (Wiig, 1997).

Wiig (1997) opined that many forward-looking companies recognised the importance of knowledge management by initiating knowledge management activities. Unfortunately, at the end of the 20th century, many organisations became discouraged with their knowledge management efforts (De Long & Fahey, 2000). Academics began to debate the viability of knowledge management as a discipline (Baskerville & Dulipovici, 2006; King, 2003). Friedman (2006) asserted that the creation of a web-based environment allowed for multiple forms of collaboration and the sharing of knowledge in real time without regard to geography or distance and argued that this new environment enhanced horizontal collaboration and resulted in innovations took place globally. According to Stewart et al. (2000), the new forms of collaboration combined with global competition created a renewed interest in knowledge management by scholars and practitioners.

Wiig (1997) asserted that the current importance of knowledge management related to various economic, industrial, and cultural developments. Organisations no longer focused merely on production and tangible assets, but they rather concentrated on intangible assets such as knowledge and information (Singh, 2008). Prusak (2001), opined that globalization is the most obvious and clearest culprit, where the speeding up of all elements of global trade and the decline of centralized economies have created an almost hectic atmosphere within firms, which feel compelled to bring new products and services to wider markets ever more quickly.

2.2.2 Theoretical Foundations of Knowledge Management

Prusak (2001) contended that many believe that consultants invented knowledge management as a response to the failed process reengineering movement. Prusak postulated that knowledge management is a combination of old and new ideas, and knowledge management theory originates from established disciplines such as economics, sociology, philosophy, and psychology (Prusak, 2001). Prusak (2001) argued that economics contributed to knowledge management by the discipline's recognition of the importance of performance variation between organisations.

Prusak (2001) asserted that sociology has significance to knowledge management through its common research interest in a knowledge-oriented society, complex structures of internal networks, and communities. He further noted that the concern for "social facts" also originates from sociology. Prusak (2001) wrote that knowledge management has inherited that concern for social facts, rather than build from theory that looks at what people actually do (p. 1004). It is the circumstances where they share knowledge or do not share it, the ways they use, change, or ignore what they learn from others (Prusak, 2001). Prusak (2001) concluded that those social facts guide (or should guide) the development of knowledge management tools and techniques.

The majority of knowledge management theory stems from strategy and organisational theory research, while knowledge management initiatives entail information technology (Alavi & Leidner, 2001). One can trace strategy's concern

with organisational knowledge through the resource-based view of the firm and its extension the knowledge-based theory of the firm (Davis et al., 2005).

2.2.3 Definition of Knowledge Management

While numerous definitions of knowledge management exist in the literature, academics do not agree on a generally accepted definition (Grossman, 2006; Lloria, 2008). Table 2.1 shows various definitions in the knowledge management literature.

Table 2.1 Definition of Knowledge Management

Year	Author(s)	Definition of knowledge management
1997	Van der Spek & Spijkervet	“the explicit control and management of knowledge within an organisation aimed at achieving the company’s objectives.” (p. 43)
2000	Susan and Dawson	A collection of procedures for conducting the creation, expansion, and effect of knowledge effectively, for the purpose of achieving the goals of the organisation.
2001	Alavi and Leidner	“refers to identifying and leveraging the collective knowledge in an organisation to help the organisation to compete (Von Krogh 1998).” (p. 113)
2002	Darroch and McNaughton	The management function that creates, locates, and manages the flow of knowledge within an organisation to ensure that knowledge is used effectively and efficiently for the long-term benefit of the organisation.
2003	Lawson	“A process that helps organisations to find, to select, organise, disseminate, and transfer important information and expertise necessary for activities as problem solving, dynamic learning, strategic planning and decision making.”(Gupta et al., 2000)
2006	Ardichvili et al.	“A complex socio-technical system that encompasses various forms of knowledge generation, storage, representation and sharing.” (p. 94)

2008	Lloria	“a series of policies and guidelines that enable the creation, diffusion and institutionalization of knowledge in order to attain the firm's objectives.” (p. 79)
2008	Jennex and Olfman	“Described by the phrase 'getting the right knowledge to the right people at the right time' and can be viewed as a knowledge cycle of acquisition, storing, evaluating, dissemination, and application.” (p. xli)
2009	Massa and Testa	A process in general system theory with four categories including knowledge acquisition and creation, knowledge capture, storage and retrieval, knowledge dissemination, transfer and sharing, and knowledge application that organisations decide to manage to gain competitive advantage (p. 131).

Sources: (Alavi & Leidner, 2001; Ardichvili, Maurer, Li, Wentling, & Stuedemann, 2006; Darroch & McNaughton, 2002; Jennex & Olfman, 2008; Lawson, 2003; Lloria, 2008; Massa & Testa, 2009; Susan & Dawson, 2000; Van der Spek & Spijkervet, 1997)

As shown in Table 2.1, the definition of knowledge management varies among academics. The knowledge management discipline is relatively new (Prusak, 2001); therefore, academics continue to refine the meaning of knowledge management (Slagter, 2007). According to Nonaka and Peltokorpi (Nonaka & Peltokorpi, 2006), an accepted definition of knowledge management does not exist; however, the most common definition is based on Hedlund (1994). According to Hedlund (1994), knowledge management refers to the generation, representation, storage, transfer, transformation, application, insertion and protection of company's knowledge. Another extended definition of knowledge management came from Schultz and Leidner (Schultze & Leidner, 2002); “Knowledge management is the generation, representation, storage, transfer, transformation, application, embedding, and protecting of organisational knowledge.” Jennex (2008) defined knowledge

management as, "Knowledge management may best be described by the phrase 'getting the right knowledge to the right people at the right time' and can be viewed as a knowledge cycle of acquisition, storing, evaluating, dissemination, and application."

For the purpose of this study, the definition of knowledge management follows Lawson's (2003) definition, aligned with the objective of the study as "A process that helps organisations to create, capture, organise, store, disseminate and apply important information and expertise necessary for activities as problem solving, dynamic learning, strategic planning and decision making, to achieve competitive advantage." The justification for that definition is because the processes in the knowledge management cycle have been used continuously in many research by many researchers such as Lawson (2003), Obenchain and Johnson (2004), Kangas (2005), Chang and Lee (2007), Nayir and Uzuncarsili (2008), Jones (2010), and Chin-Loy & Mujtaba (2011). In this case it is considered that definition is still reliable and in-line with the objectives of this study.

2.2.4 Knowledge Management Cycle

Lawson (2003) asserted that knowledge management is a continuous process and becomes an expanding spiral as more and more knowledge is added and managed over time. This continuous process of escalating knowledge is referred to as the knowledge management cycle. According to Lawson (2003), researchers combine various processes to form the knowledge management cycle. Table 2.2 shows the